WHITECAP RESOURCES INC

Northern AB / Northeast BC

Emergency Response Plan

Whitecap AB/SK 24 Hr Emergency: 866-590-5289
Whitecap BC 24 Hr Emergency: 250-787-3700
AER 24 Hr Incident Reporting: 800-222-6514
OGC 24 Hr Incident Reporting: 800-663-3456
CER 24 Hr Incident Reporting: 403-299-2773

An **H2Safety** Product

Revision History

This Emergency Response Plan is effective March 28, 2022. The company's Emergency Response Program Coordinator is responsible for updating this plan annually or as required. Any errors or omissions in the plan should be brought to their attention.

Date of Update Inserted Into ERP: **Signature:**

_____   _____

ERP Revision Due Date: March 28, 2023				
Date of Revision	**Date of Issue**	**Reason For Revision**	**Section**	**Affected Pages**
July 20, 2022	July 20, 2022	Added Oil Spill Decontamination Procedures	Foreword	Revision History Main TOC
			Section 4	TOC Post Incident
March 28, 2022	March 28, 2022	Annual Update / New ERP Manual	All	All
July 14, 2021	July 14, 2021	New area and employees; update to foreword, flowchart, phone lists, site specific information, addition of new area	Foreword	All
			Section 1: Initial Response	Internal Notification Flowchart - Alberta
				Response Teams Phone List
			Area Specific Information	
			Boundary Lake BC	Site Section Only
			Boundary Lake AB	Site Section Only
			Elmworth / Wapiti	Site Section Only
			Karr	Site Section Only
			Simonette	Site Section Only
			Sturgeon Lake	Site Section Only
			Sturgeon Lake 13-07	Site Section Only
			Valhalla / Progress	Site Section Only
			Kakwa	All
March 31, 2021	March 31, 2021	Annual Update	Foreword	All
			Section 1: Initial Response	All
			Section 4: Emergency Response Procedures	AB Public Protection Measures Flowchart
			Section 5: External Agencies	All
			Section 6: Forms	A7 STARS Landing Zone Card

Date of Revision	Date of Issue	Reason For Revision	Section	Affected Pages
March 31, 2021, continued	March 31, 2021, continued	Annual Update	Area Specific	All
March 26, 2020	March 26, 2020	New ERP Core template. Annual update to Area Specific Information: updated hazard calculations, completed public involvement program and updated contact lists for Boundary Lake AB, Boundary Lake BC and Valhalla. Operations description update to Elmworth/Wapiti and Karr site sections.	Foreword to Appendices	All Sections (New ERP Core)
			Area Specific Information	
			Boundary Lake CER	All
			Boundary Lake BC	All
			Boundary Lake AB	All
			Elmworth / Wapiti	Site Section Only
			Karr	Site Section Only
			Valhalla / Progress	All
March 26, 2019	March 26, 2019	Yearly update to Revision History, Distribution List and Table of contents	Foreword	All
		Changed "sensitive" to "special needs"	Section 1: Initial Response	Five Step Guide, AER Assessment Matrix
		Updated to most current OGC Incident Classification Matrix		OGC Incident Classification Matrix
		Revised contact names/numbers		Step 2 – Internal Notification for BC/AB
		Added reporting info for OGC, flowchart, and comments about completing A1 form and where to find telephone numbers.		Step 3 – External Notification
		New version of the Public Protection Measures Flowchart to include HPZ language. Design change.		Step 5 – Public Protection Measures Flowchart AB / BC
		Revised table of contents to match new content added.	Section 2: Roles & Responsibilities	Table of Contents
		Added General Safety Equipment and Resource Lists heading.		Page 1
		Added bullet point to Information Officer about developing a communications plan that establishes protocols on the use/transfer of confidential information.
Updated note on bottom of page to include Escalation and Stand-Down of Emergencies.		Command Staff Roles
		Added note to Documentation Unit about keeping records for 5 years.		Planning Staff Roles

Date of Revision	Date of Issue	Reason For Revision	Section	Affected Pages
March 26, 2019, continued	March 26, 2019, continued	Added 3 notes to Compensation & Claims Unit regarding expense claims being submitted to appropriate parties.	Section 2 Roles and Responsibilities	Finance/ Admin. Roles
		Changes Critical Sour to say Critical / Special Sour to match both OGC and AER regs. Added bullet point to Air Monitor Roles regarding measuring H_2S and LEL levels at edge of EPZ to determine public protection measure criteria.		Air Monitors
		Removed telephone list from core, to be included with Area Specific Information		Response Teams Phone List
		Added 2 new sections on Internal Communication and Communicating with the public.	Section 3: Communications and Media	All
		Public Protection Measures Tab - Added new information to Evacuation regarding monitoring air quality at edge of EPZ and developing methods to evacuate transients. Added new section called Road and Airspace Closures. Revised Ignition Procedure and Public Protection Measures Flowchart to include HPZ language, Notification and Evacuation Requirements Outside of HPZ as well as new design.	Section 4: Emergency Response Procedures	Pages 25-28
		Spill Response Tab - Revised Spill charts for AB / BC, changed note regarding specifics around AB and SK to be general for all provinces, added WCSS links for spill plans and live equipment lists and changed CSA Reference.		Pages 65-68, 69-70
		Post Incident Tab - added paragraph at beginning about keeping documentation for a minimum of 5 years, revised entire CISD section, added documentation statement to Accident Investigation.		Pages 124-127

Date of Revision	Date of Issue	Reason For Revision	Section	Affected Pages
March 26, 2019, continued	March 26, 2019, continued	Revised Government Notification Matrix, Lead, Supporting and Federal Agency roles due to updated regulations, agency name changes, as well as updated roles & responsibilities identified during consultation process.	Section 5: External Agencies	All
		Added heading and information on Documentation During and After an Incident.	Section 6: Forms	Table of Contents and pages 1-2
		Revised table of contents to match new content added.	Appendices	Table of Contents
		Added Communication methods Between Command Post BC Specific version and revised AB version.		Appendix E Pages 7-8
		Revised note about H$_2$S ignition that was incorrect.		Appendix H – Page 14
		Added HPZ.		Appendix N – Pages 30-31
				Appendix O – Page 34
		Complete revision of maps, contact numbers, EPZ calculation tables, etc.	Area Specific Information Foreword	All

Date of Issue	Reason For Revision	Section	Affected Pages
February 1, 2018	Annual update to ERP. Applied company-wide corporate changes, updated operations phone list and relevant charts. Updated government contact information and roles. Updated all required site sections and applied new resident information for applicable site sections.	Foreword	ALL
		Section 1: Initial Response	Five Step Initial Response Guide, BC & AB Incident Classification Matrices, Internal & External Emergency Notification Flowcharts, BC & AB Public Protection Measures Flowcharts
		Section 2: Roles & Responsibilities	Key Response Personnel, Response Teams Phone List
		Section 4: Emergency Response Procedures	TOC, BC & AB Public Protection Measures Flowcharts, BC & AB Petroleum Release Reporting Requirements Charts, Transportation Incidents Section (ALL)
		Section 5: External Agencies	ALL
		Section 6: Forms	A3: Regulatory First Call Communication
		Appendices	Appendix N: Acronyms, Appendix O: Glossary of Terms
		Area Specific Information	
		Area Specific Information Foreword	Area Overview Map
		NEB Pipelines	ALL

Date of Issue	Reason For Revision	Section	Affected Pages
February 1, 2018, continued	Annual update to ERP. Applied company-wide corporate changes, updated operations phone list and relevant charts. Updated government contact information and roles. Updated all required site sections and applied new resident information for applicable site sections.	Boundary Lake AB	ALL
		Boundary Lake BC	ALL
		Elmworth / Wapiti	ALL
		Karr	ALL
		Simonette	ALL
		Valhalla / Progress	ALL
October 1, 2016	Annual update to ERP. Applied company-wide corporate changes and updated operations phone list. Updated all required site sections and changed Karr's access map to a shorter route and added a new site section for the Elmworth area. Updated all government contact information, added in Hazards Assessment for NEBC and applied new resident information for all applicable site sections.	Foreword	ALL (except Cover Page)
		Section 1: Initial Response	BC Incident Matrix, Internal & External Emergency Notification Flowcharts
		Section 2: Roles & Responsibilities	Key Response Personnel List & Response Teams Phone List
		Section 4: Emergency Response Procedures	TOC, Pages 27-31 & 79-81
		Section 5: External Agencies	ALL
		Section 6: Forms	TOC
		Area Specific Information	
		Area Specific Information Foreword	Area Overview Map
		NEB Pipelines	ALL
		Boundary Lake AB	ALL (except access maps)
		Boundary Lake BC	ALL (except access maps)
		Karr / Simonette	Field contact information, On-Site Storage & Karr's access map
		Elmworth (New)	ALL
		Valhalla	ALL (except access map)
November 1, 2015	New ERP manual	ALL	ALL

Manual #	Type	Res Info	Branch	Title / Agency	Name
				Corporate	

2 Hard Corporate Manuals

				Field	

7 Hard Field Manuals

				External	

2 E-Submissions

3 Hard External Manuals

10 Digital External Manuals

2 Environmental Emergency External Manuals

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Table of Contents

Section 2: Roles and Responsibilities, continued

Section 3: Communications & Media

Section 4: Emergency Response Procedures

Section 4: Emergency Response Procedures, continued

Section 5: External Agencies

Section 6: Forms

Documentation During and After an Incident

Form Descriptions

Incident Command System (ICS) Forms

ICS 201 Incident Briefing

ICS 202 Incident Objectives

ICS 203 Organization Assignment List

ICS 204 Assignment List

ICS 207 Incident Organization Chart

ICS 208 Safety Message / Plan

ICS 209 Incident Status Summary

ICS 211 Check-In / Out List

ICS 214 Activity Log

ICS 215 Operational Planning Worksheet

ICS 215A IAP Safety Analysis

ICS 221 Demobilization Checkout

ICS 230 Meeting Schedule

ICS 231 Meeting Summary

ICS 233 Incident Open Action Tracker

Emergency Forms

A1 Initial Emergency Report Form

A2 Odour Complaint Script

A3 Regulatory First Call Communication

A4 Incident Action Plan Checklist

A5 Air Monitoring Log

A6 Threatening Call / Bomb Threat

A7 STARS Landing Zone Card

Resident Forms

B1 Reception Centre Registration Log

B2 Resident Compensation Log

B3 Resident Contact Log

B4 Roadblock Log

B5 Evacuation Notice

B6 Early Notification / Voluntary Evacuation Phone Message

B7 Shelter-In-Place Phone Message

B8 Evacuation Phone Message

Media Forms

C1 Preliminary Media Statement

C2 Media Contact Log

C3 Government Agency Contact Log

C4 Media Centre Site

PPOST Form

Appendices

Area Specific Information

   Overview Map
   Response Facilities
   CER
   Boundary Lake BC
   Boundary Lake AB
   Elmworth / Wapiti
   Kakwa
   Karr
   Simonette
   Sturgeon Lake
   Sturgeon Lake 13-07-69-24 W5M Gas Plant
   Valhalla / Progress

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Section 1: Initial Response

A1 Initial Emergency Report Form

Five Step Initial Response Guide

Five Step Worksheet

Step 1 – Level of Emergency

Step 2 – Internal Notification

Response Team Phone List

Step 3 – External Notification

Step 4 – Incident Briefing

Step 5 – Public Safety

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A1 Initial Emergency Report Form

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First On-Scene Actions

Evacuate	☐ Get to a safe area immediately. ☐ Move upwind if release is downwind of you. ☐ Move crosswind if a release is upwind from you. ☐ Move to higher ground if possible.
Alarm	☐ Call for help ("Man Down"). ☐ Sound bell, horn or whistle, or call by radio. ☐ For medical emergencies, call 911.
Assess	☐ Take head count, locate any casualties. Consider all of the hazards. ☐ Fill out information below to complete assessment.
Protect	☐ Put on breathing apparatus before attempting rescue.
Rescue	☐ Remove victim to a safe area.
First Aid	☐ Follow the standard first aid protocols at worksite. (CPR, etc.)
Medical Aid	☐ Arrange transport of casualties to medical aid. ☐ Provide information to Emergency Medical Services (EMS).

Incident Details *To be completed by the person involved or notified*

Report taken by	Date / Time
Name of person calling	Caller Telephone
Incident Location	*(LSD / NTS)*

Event Summary

Agencies Notified	☐ Yes Who? ☐ No		
Event Status	☐ Incident contained or controlled ☐ Imminent control possible	☐ Intermittent control possible ☐ Incident is uncontrolled	
Site Type	☐ Well ☐ Pipeline ☐ Tank Farm/Storage	☐ Battery/Plant/Facility	☐ Other_____
Incident Type	☐ Sour Gas Release ☐ Sweet Gas Release ☐ Pipeline Break ☐ Security (theft, threat, terrorism) ☐ Loss of Containment ☐ Fire/Explosion ☐ Worker Injury/Fatality ☐ Vehicle/Transportation ☐ Liquid Spill ☐ Other_____		

A1 Initial Emergency Report Form

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Impacts		
Public Health and Safety	☐ Could be jeopardized	☐ Is jeopardized
Public Protection Measures Taken	☐ Notification ☐ Evacuation	☐ Shelter-in-place ☐ Roadblocks
Worker Injuries	☐ First Aid ☐ Hospitalized	☐ Fatality ☐ Other_____

Distance to nearest surface development	_____km	Distance to nearest urban centre _____km

Details

Release Impact	☐ On-Lease ☐ Off-Lease Product_____	Amount_____
Gas Readings	H$_2$S_____ SO$_2$_____ LEL_____ Other_____	

Distance to nearest watercourse	_____km	Weather Conditions

Details

Media Involvement?	☐ Yes ☐ No	**Regulator Involvement?**	☐ Yes ☐ No	**Public Affairs/Community Relations Issues?**	☐ Yes ☐ No

Details

Notes / Instructions Provided:

Distribute this completed report to all Key Response Personnel

Note: Ensure the First On-Scene Actions have been completed before proceeding to the Five Step Initial Response Guide.

First On-Scene Actions

Evacuate
Alarm
Assess
Protect
Rescue
First Aid
Medical Aid

Refer to A1 Initial Emergency Report Form

Step 1 - Level of Emergency

Determine Level of Emergency:
- ❑ **Alert / Minor**
- ❑ **Level 1 Emergency**
- ❑ **Level 2 Emergency**
- ❑ **Level 3 Emergency**

Use the following resources:
- **Section 1: Initial Response (Level of Emergency)**
- The Emergency Assessment SmartPhone App. (Search H₂Safety or Emergency Assessment in the App Store).

Note: The OGC and the AER state that the licensee must use either the Incident Classification Matrix (BC) or the Assessment Matrix for Classifying Incidents (AB) to determine the Level of Emergency. If the incident overlaps more than one level, always choose the highest level.

Step 2 - Internal Notification

- ❑ Follow the Internal Emergency Notification Flowchart to determine who needs to be notified.
- ❑ Relay the information in the completed **A1** Initial Emergency Report Form.
- ❑ Mobilize internal resources to the site, to the Incident Command Post (ICP), to the Corporate Emergency Operations Centre (CEOC), or place them on standby as required.

Use the following resources:
- **Section 1: Initial Response (Internal Emergency Notification Flowchart)**
- **Section 2: Roles & Responsibilities (Response Team Phone List)**
- **Section 6: Forms (A1)**
- Initiate an H₂CommandCentre session. **H₂CommandCentre**

Step 3 - External Notification

- ❑ Follow the External Emergency Notification Flowchart to determine which external agencies need to be notified.
  - ❑ 911 (police, fire, ambulance)
  - ❑ Regulatory agency to confirm the Level of Emergency
  - ❑ Local Authority (Cities, Towns, Villages, Counties, M.D.s, R.D.s, R.M.s, Special Areas, Reserves, etc.)
  - ❑ Health Authority / Health Services
  - ❑ Air Monitoring (at all levels of emergency)
- ❑ Use the following resources:
  - **Section 1: Initial Response (External Emergency Notification Flowchart)**
  - **Section 5: External Agencies (Provincial Notification Matrix)**
  - **Area Specific Information (White tabs)**

Step 4 - Incident Briefing

Complete an **ICS 201** Incident Briefing Form:
- ❑ Define incident details and an operational period (page 1).
  - Establish the On-Site Command Post (OSCP) and ICP.
- ❑ Document current incident objectives, strategies and tactics (page 2).
- ❑ Prioritize objectives (page 2).
- ❑ Define initial Incident Command Structure (page 3).
- ❑ Identify required resources and when they'll be available (page 4).

Use the following resources:
- **Section 1: Initial Response (ICS 201)**
- **Section 6: Forms (ICS 201)**

Step 5 - Initiate Public Safety

Public Protection Measures

- ❑ Determine the hazard area; start with Emergency Planning Zone (EPZ) as default.
- ❑ Identify the affected surface developments and area users. (Houses, businesses, guides/outfitters, trappers, schools, other oil and gas operators, etc.)
- ❑ Determine the appropriate public protection measure for the affected surface developments and area users. (Evacuation, shelter-in-place and/or ignition)
- ❑ Coordinate evacuation outside of the EPZ with the local authority, if required.
- ❑ Utilize broadcast media to notify public outside of the EPZ in immediate evacuation situations.

Use the following resources:
- **Section 1: Initial Response (Public Protection Measures Flowchart)**
- **Section 4: Emergency Response Procedures (Public Protection Measures)**
- **Area Specific Information (Map / EPZ calculation tables)**

Rovers

- ❑ Dispatch Rovers to patrol the EPZ.
- ❑ Follow safety procedures and have appropriate PPE.
- ❑ Search the EPZ for transients.
- ❑ Assist residences that require evacuation assistance.
- ❑ Investigate surface developments that are identified as vacant or those who were unable to contact.
- ❑ Post notices on all outside doors of empty surface developments, vehicles, etc.
- ❑ Record all contacts, communications and monitoring readings using the following forms: **ICS 214, A5, B3 & B5**.
- ❑ Monitor and record air quality readings using the following forms: **ICS 214 & A5**. (Smoke, plumes, wind, etc.)
- ❑ Provide status updates to the Public Safety Group Supervisor at established intervals; utilize H₂CommandCentre if available. **H₂CommandCentre**

Use the following resources:
- **Section 2: Roles & Responsibilities (Rovers)**
- **Section 6: Forms**
- **Area Specific Information (Map)**

Telephoners

- ❑ Establish a Telephoner Team to notify residents to evacuate or shelter-in-place as required.
- ❑ Notify special needs residents at a Level 1 Emergency and provide the option to evacuate voluntarily.
- ❑ Follow-up phone calls to address resident inquiries.
- ❑ Record all phone calls and communications using the following forms: **ICS 214, B3, B6, B7, & B8.**
- ❑ Provide status updates to the Public Safety Group Supervisor at established intervals; utilize H₂CommandCentre if available. **H₂CommandCentre**

Use the following resources:
- **Section 2: Roles & Responsibilities (Telephoners)**
- **Section 6: Forms**

Roadblocks

- ❑ Follow safety procedures to safely establish roadblocks wherever a road intersects with the EPZ and advise vehicles to reroute.
- ❑ Record all vehicle encounters and air monitoring readings. Complete the following forms: **ICS 214, A5, B3 & B4.**
- ❑ Gain permission from the Public Safety Group Supervisor for response vehicles to enter the hazard area.
- ❑ Provide status updates to the Public Safety Group Supervisor at established intervals; utilize H₂CommandCentre if available. **H₂CommandCentre**

Use the following resources:
- **Section 2: Roles & Responsibilities (Roadblocks)**
- **Section 6: Forms**
- **Area Specific Information (Map)**
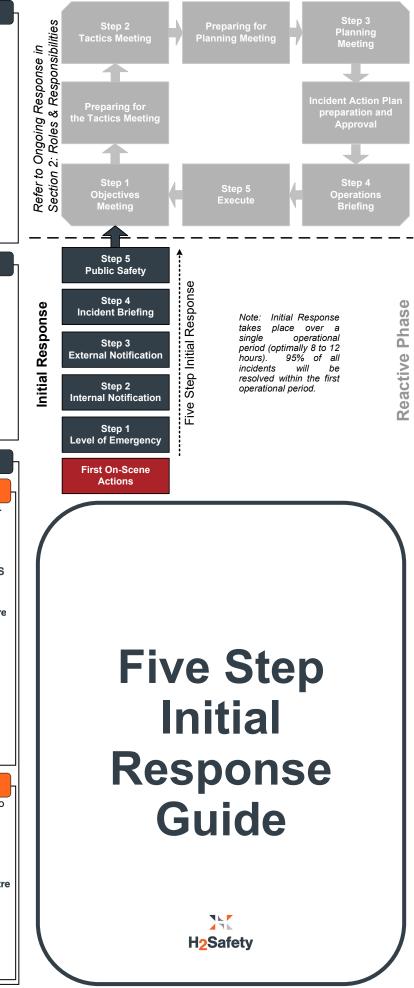
Air Monitors

- ❑ Dispatch Air Monitoring personnel to the nearest residence / public facility downwind of the incident.
- ❑ Follow safety procedures and have appropriate PPE.
- ❑ Monitor and record air quality readings using the following forms: **ICS 214 & A5**. (Smoke, plumes, wind, etc.)
- ❑ Provide status updates to the Public Safety Group Supervisor at established intervals; utilize H₂CommandCentre if available. **H₂CommandCentre**

Use the following resources:
- **Section 2: Roles & Responsibilities (Air Monitors)**
- **Section 6: Forms**

Reception Centre Rep

- ❑ If residents are evacuated, dispatch a Reception Centre Representative to the reception centre location.
- ❑ Meet and register evacuated residents.
- ❑ Record contact information for those who choose to stay elsewhere. Complete the following forms: **ICS 214, B1, B2 & C2.**
- ❑ Regularly provide status updates to the Public Safety Group Supervisor (those who have arrived and those who have not yet arrived); utilize H₂CommandCentre if available. **H₂CommandCentre**

Use the following resources:
- **Section 2: Roles & Responsibilities (Reception Centre Rep)**
- **Section 6: Forms**

Refer to Ongoing Response in Section 2: Roles & Responsibilities

Step 2 Tactics Meeting → **Preparing for Planning Meeting** → **Step 3 Planning Meeting**

Preparing for the Tactics Meeting ← **Incident Action Plan preparation and Approval** ←

Step 1 Objectives Meeting → **Step 5 Execute** → **Step 4 Operations Briefing**

Reactive Phase

Initial Response / Five Step Initial Response

- **Step 5 Public Safety**
- **Step 4 Incident Briefing**
- **Step 3 External Notification**
- **Step 2 Internal Notification**
- **Step 1 Level of Emergency**
- **First On-Scene Actions**

Note: Initial Response takes place over a single operational period (optimally 8 to 12 hours). 95% of all incidents will be resolved within the first operational period.

Five Step Initial Response Guide

H₂Safety

Note: This document is to be used as a guide only. It is not meant to replace the use of the ERP and does not eliminate the need for ERP related training.

Revised November 2021

Five Step Worksheet

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Step 1 – Level of Emergency	Determine the Level of Emergency using the Assessment Matrix for Classifying Incidents	
☐ **Alert / Minor**	☐ **Level 2**	
☐ **Level 1**	☐ **Level 3**	
For any emergency involving an CER regulated site, utilize the appropriate emergency assessment matrix for that province.		

Step 2 – Internal Notification	Notify recommended Whitecap staff using the Internal Emergency Notification Flowchart	
FIELD	**CORPORATE**	
Operator Name: *Phone Number:*	*Corporate Contact:* *Phone Number:*	
Lead Operator Name: *Phone Number:*	*Corporate Contact:* *Phone Number:*	
Area Foreman Name: *Phone Number:*	*Corporate Contact:* *Phone Number:*	

Step 3 – External Notification	Notify recommended external agencies using the External Emergency Notification Flowchart	
911	*Other:* *Phone Number:*	
AER	*Other:* *Phone Number:*	
Local Authority: *Phone Number:*	*Other:* *Phone Number:*	
Health Authority: *Phone Number:*	*Other:* *Phone Number:*	

Step 4 – Incident Briefing	Complete an ICS 201 Incident Briefing Form

Step 5 – Public Safety	Determine the requirements for sheltering, evacuation, ignition, isolation procedures and the resources required
Public protection measures	Refer to last page of Section 1
Air Monitors	Refer to Air Monitors roles
Reception Centre Rep	Refer to Reception Centre Rep roles
Rovers	Refer to Rovers roles
Roadblocks	Refer to Roadblocks roles
Telephoners	Refer to Telephoners roles

Notes:

Assessment Matrix for Classifying Incidents
Follow these 3 steps to determine the Level of Emergency

Step 1		Table 1 – Consequence of Incident
Rank	Category	Example of Consequence in Category
1	Minor	☐ No worker injuries. ☐ Nil or low media interest. ☐ Liquid release contained on site. ☐ Gas release impact on site only.
2	Moderate	☐ First Aid treatment required for on-site worker(s). ☐ Local and possible regional media interest. ☐ Liquid release not contained on site. ☐ Gas release impact has potential to extend beyond site.
3	Major	☐ Worker(s) requires hospitalization. ☐ Regional and national media interest. ☐ Liquid release extends beyond site – not contained. ☐ Gas release impact extends beyond site – public health / safety could be jeopardized.
4	Catastrophic	☐ Fatality. ☐ National and international media interest. ☐ Liquid release off site not contained – potential for, or is, impacting water or sensitive terrain. ☐ Gas release impact extends beyond site – public health / safety jeopardized.

Under "Example of Consequence in Category" column, select the box with the worst consequence that currently fits the incident. For example, if there is a fatality on site you must select the "Catastrophic" category which would give you a "Rank" of 4.

Step 2		Table 2 – Likelihood of Incident Escalating *
Rank	Descriptor	Example of Consequence in Category
1	Unlikely	The incident is contained or controlled and it is unlikely that the incident will escalate. There is no chance of additional hazards. Ongoing monitoring required.
2	Moderate	Control of the incident may have deteriorated but imminent control of the hazard by the licensee is probable. In either case, it is unlikely that the incident will further escalate.
3	Likely	Imminent and/or intermittent control of the incident is possible. The licensee has the capability of using internal and/or external resources to manage and bring the hazard under control in the near term.
4	Almost Certain or Currently Occurring	The incident is uncontrolled and there is little chance that the licensee will be able to bring the hazard under control in the near term. The licensee will require assistance from outside parties to remedy the situation.

* What is the likelihood that the incident will escalate, resulting in an increased exposure to public health, safety, or the environment?

Sum the "Rank" from Table 1 and Table 2 to obtain the Risk Level and the Incident Classification

Combine the two rankings from the above tables to obtain the "Risk Level" and "Level of Emergency".

For example, if the "Consequence Rank" is 4 and the "Likelihood Rank" is 1 then the combined score or "Risk Level" is 5.

A "Risk Level" of 5 would be classified as a Level 1 Emergency.

Refer to the appropriate column in Table 4 (reverse of this page) for responses to the Level of Emergency that has been determined.

Step 3	Table 3 – Incident Classification
Risk Level	Assessment Results
Very Low 2 – 3	Alert
Low 4 – 5	Level – 1 Emergency
Medium 6	Level – 2 Emergency
High 7 – 8	Level – 3 Emergency

Note:
1. In Alberta the licensee **must** use the Assessment Matrix for Classifying Incidents to classify an incident.
2. In Alberta the licensee **must** contact the Alberta Energy Regulator (AER) after it has communicated and activated internal response resources to confirm the level of emergency and convey the specifics of the incident.
3. After contacting the Alberta Energy Regulator (AER), the licensee in Alberta, must notify the local authority, the RCMP/police and the local health authority if the hazardous release goes off site and has the potential to impact the public or if the licensee has contacted members of the public or the media.
4. Once the situation improves, the licensee must make the decision to downgrade or stand down an emergency in consultation with the government regulator.

The H2Safety Services Inc. Emergency Assessment Smart Phone app is the preferred method for determining the level of emergency. Search H2Safety or Emergency Assessment in the Apple or Android app store.

Emergency / Alert / Level 1 / Level 2 / Level 3

Step 4		Table 4 – Incident Response – Incident Classification		
Responses	Alert	**Level – 1 Emergency**	**Level – 2 Emergency**	**Level – 3 Emergency**
Communications				
Internal	Discretionary, depending on licensee policy.	Notification of off-site management.	Notification of off-site management.	Notification of off-site management.
External Public	Courtesy, at licensee discretion.	Mandatory for individuals who have requested notification within the EPZ.	Planned and instructive in accordance with the specific ERP.	Planned and instructive in accordance with the specific ERP.
Media	Reactive, as required.	Reactive, as required.	Proactive media management to local or regional interest.	Proactive-media management to national interest.
Government	Reactive, as required. Notify AER if public or media is contacted.	Notify government regulator.	Notify government regulator, local authority & health authority.	Notify government regulator, local authority & health authority.
Actions				
Internal	On site, as required by licensee.	On site, as required by licensee. Initial response undertaken in accordance with the site-specific or corporate-level ERP.	Predetermined public safety actions are under way. Corporate management team alerted and may be appropriately engaged to support on-scene responders.	Full implementation of incident management system.
External	On site, as required by licensee.	On site, as required by licensee.	Potential for multi agency (operator, municipal, provincial or federal) response.	Immediate multi agency (operator, municipal, provincial or federal) response.
Resources				
Internal	Immediate and local. No additional personnel required.	Establish what resources would be required.	Limited supplemental resources or personnel required.	Significant incremental resources required.
External	None.	Begin to establish resources that may be required.	Possible assistance from government agencies and external support services, as required.	Assistance from government agencies and external support services, as required.

Responses	Alert	**Level – 1 Emergency**	**Level – 2 Emergency**	**Level – 3 Emergency**
Definition	An incident that can be handled on site by the licensee through normal operating procedures and is deemed to be a very low risk to members of the public.	There is no danger outside the licensee's property, there is no threat to the public, and there is minimal environmental impact. The situation can be handled entirely by licensee personnel. There will be immediate control of the hazard. There is little or no media interest.	There is no immediate danger outside the licensee's property or the right-of-way, but there is the potential for the emergency to extend beyond the licensee's property. Outside agencies must be notified. Imminent control of the hazard is probable but there is a moderate threat to the public and/or the environment. There may be local and regional media interest in the event.	The safety of the public is in jeopardy from a major uncontrolled hazard. There are likely significant and ongoing environmental impacts. Immediate multi agency municipal and provincial government involvement is required.
	Alert	**Level – 1 Emergency**	**Level – 2 Emergency**	**Level – 3 Emergency**
Responses	Investigate and escalate level if required initiate control procedures	In addition to Alert level responses: - Isolate the hazard area - Activate the ERP - Conduct public safety actions for special needs residents - If special needs residents decide to voluntarily evacuate, activate a reception centre - Notify appropriate internal personnel and government agencies - Have air monitoring conducted at the site if necessary	In addition to Level-1 responses: - Fully activate emergency response procedures with command centres established or on standby - Inform government agencies of situation and incorporate support (government regulator, local authority, health authority, RCMP) - Identify the hazard and emergency operating areas and take any required action to protect the public through shelter or evacuation. - Prepare ignition team (butane gas related) - Respond to media, company and public questions - Prepare for the potential of the situation to escalate to a Level-3 - Record activities and keep government and municipal agencies advised, if applicable - Establish roadblocks - Activate the EOC, if it has not already been established at a Level-1 emergency	In addition to Level-2 responses: - Emergency response plan and command centres are fully activated - Company Management has been notified and all internal support positions staffed - Continue to monitor and adjust hazard and emergency operating areas (maintain security) - Mobilize additional people and resources - Ignite a gas release if ignition criteria are met - Continue to advise company and government - Activate the reception centre, if it has not already been established at a Level-1 or Level-2 emergency - Continue to maintain the EOC, once it is activated

Step 1 – Level of Emergency

H₂Safety

Incident Classification Matrix

BC Oil & Gas COMMISSION

Instructions: Start at the top and continue down until you check off any one box in both consequence and probability to determine the incident classification. *This matrix is required as an attachment upon submission of an incident through the Online Minor Incident Reporting System.*

Table 1. Consequence Ranking

Rank	Consequence (any one of the following)
4	☐ Major on site equipment or infrastructure loss ☐ Major act of violence, sabotage, or terrorism which impacts permit holder assets ☐ Reportable liquid spill beyond site, uncontained and affecting environment ☐ Gas release beyond site affecting public safety
3	☐ Threats of violence, sabotage, or terrorism ☐ Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property ☐ HAZMAT worker exposure exceeding allowable ☐ Major on site equipment failure
2	☐ Major on site equipment damage ☐ A security breach that has potential to impact people, property or the environment ☐ Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property
1	☐ Moderate on site equipment damage ☐ A security breach that impacts oil and gas assets ☐ Reportable liquid spill or gas release on location ☐ **Occurrence of magnitude 4.0 or greater induced earthquake within 3 km of oil and gas operations or any earthquake which is felt on surface within a 3 km radius of oil and gas operations
0	☐ No consequential impacts

** For this consequence criteria, a probability score of 2 or higher must be used.

Table 2. Probability Ranking

Rank	Probability (any one of the following)
4	☐ Uncontrolled, with control unlikely in near term
3	☐ Escalation possible; under or imminent control
2	☐ Escalation unlikely; controlled or likely imminent control
1	☐ Escalation highly unlikely; controlled or imminent control
0	☐ Will not escalate; no hazard; no monitoring required

Table 3. Incident Risk Score and Classification

Consequence _____ + Probability _____ = Risk Score _____ (this must be completed)

Risk Score	Assessment Result
Minor (1-2)	**Notification Only;** permit holder must notify the Commission online within 24 hours using the Form A: Minor Incident Notification Form (http://www.bcogc.ca/node/11188/download). In addition to Form A, spills must also be reported to EMBC.
Moderate (3-4)	**Level-1 Emergency;** immediate notification (call EMBC)
Major (5-6)	**Level-2 Emergency;** immediate notification (call EMBC)
Serious (7-8)	**Level-3 Emergency;** immediate notification (call EMBC)

Emergency
Alert
Level 1
Level 2
Level 3

The H₂Safety Services Inc. Emergency Assessment Smart Phone app is the preferred method for determining the level of emergency. Search H₂Safety or Emergency Assessment in the Apple or Android app store.

Section 1: Initial Response

OGC Incident Classification Matrix

Consequence		Probability				
		4	**3**	**2**	**1**	**0**
		Uncontrolled, with control unlikely in near term	Escalation possible; under or imminent control	Escalation unlikely; controlled or likely imminent control	Escalation highly unlikely; controlled or imminent control	Will not escalate; no hazard; no monitoring required
4	☐ Major on site equipment or infrastructure loss ☐ Major act of violence, sabotage, or terrorism which impacts permit holder assets ☐ Reportable liquid spill beyond site, uncontained and affecting environment ☐ Gas release beyond site affecting public safety	Level 3	Level 3	Level 2	Level 2	Level 1
3	☐ Threats of violence, sabotage, or terrorism ☐ Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property ☐ HAZMAT worker exposure exceeding allowable ☐ Major on site equipment failure	Level 3	Level 2	Level 2	Level 1	Level 1
2	☐ Major on site equipment damage ☐ A security breach that has potential to impact people, property or the environment ☐ Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property	Level 2	Level 2	Level 1	Level 1	Minor Notification Form
1	☐ Moderate on site equipment damage ☐ A security breach that impacts oil and gas assets ☐ Reportable liquid spill or gas release on location ☐ ** Occurrence of magnitude 4.0 or greater induced earthquake within 3 km of oil and gas operations or any earthquake which is felt on surface within a 3 km radius of oil and gas operations	Level 2	Level 1	Level 1	Minor Notification Form	Minor Notification Form
0	☐ No consequential impacts	Level 1	Level 1	Minor Notification Form	Minor Notification Form	No Notification Required

Minor Incidents

- The permit holder must report the minor incident to the Commission within 24 hours by electronic submission through the Online Minor Incident Reporting System, opened through KERMIT.
- If the minor incident involves a leak or a spill, EMBC must also be called at 1-800-663-3456 so that a Dangerous Goods Incident Report (DGIR) number may be issued.

Level 1, 2, or 3 Emergency

- If the incident receives a score of Level 1, 2, or 3, it must be **reported immediately (within 1 hour)** to the Commission's incident reporting line (EMBC 1-800-663-3456).

Escalating, Downgrading or Standing-Down of Emergency

- The Commission must be notified as soon as possible of any change to the emergency status.
- The permit holder must consult with the Commission for escalating, downgrading or the standing-down of an incident.

Permit Holders Post-Incident Report

The Form D: Permit Holder Post Incident Report Form (https://www.bcogc.ca/node/5771/download) must be submitted by the permit holder to the Commission within 60 days for:
1. Any Level 1, 2 or 3 emergency incident: complete Part A-P; or
2. Any pipeline incident (including minor notification): complete Part A-U; or
3. Upon request by the Commission

This report and accompanying documentation can be found on the Commission's website under Emergency Response and Planning and must be emailed electronically to EMP@bcogc.ca.

** For this consequence criteria, a probability score of 2 or higher must be used.

Spill Reporting Criteria

Where the permit holder holds or maintains rights, the permit holder must report to the BC Oil and Gas Commission, all spills of materials as identified below:

- A spill or release of any amount of materials which impacts water ways
- Hydrocarbons; 100 litres where the hydrocarbon contains no toxic materials and does not impact water ways
- Produced/salt water; 200 litres where the fluid contains no toxic materials
- Fresh water; 10,000 litres
- Drilling or invert mud; 100 litres
- Sour Natural gas; 10 kg or 15 m^3 by volume where operating pressure is >100 PSI
- Condensate; 100 litres
- Any fluid including hydrocarbons, drilling fluids, invert mud, effluent, emulsions, etc. which contain toxic substances; 25 litres

Please refer to the BC Environmental Management Act; Spill Reporting Regulation, Schedule "Reporting Levels for Certain Substances" for determining reportable spillage amounts of other substances:

Other Reportable Incidents

The Commission's Incident Risk Classification Matrix is designed to assist permit holders in determining which incidents must be reported. However, some incidents, which do occur, may not meet the criteria outlined in the Incident Classification Matrix but still require notification to the Commission as a minor notification. These include the following:

- Spills or release of hazardous substances which are not provincially regulated, such as radioactive substances;
- Major damage to oil and gas roads or road structures;
- Drilling kicks when any one of the following occur:
  - pit gain of 3 m^3 or greater
  - casing pressure 85% of MA
  - 50% out of hole when kicked
  - well taking fluid (LC)
  - associated spill
  - general situation deterioration, i.e. leaks, equipment failure, unable to circulate, etc
- All pipeline incidents, such as spills during construction phase, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device during operations
- Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only

Sour Gas

When a sour gas product is released, any measurement of 10 ppm or greater measured at 1 metre from the source of the leak requires reporting as an incident.

Releases Near Airports

If the emergency involves the release of flammable vapour at the site of an oil and gas activity that is located within 2 kilometres of an airport, immediately notify the operator of the airport.

Oil and Gas Road Closures

In emergency situations, permit holders must phone the Commission's 24 hour Incident Reporting line to notify the Commission of needed emergency oil and gas road closures.

Special Sour Wells

During and emergency involving a special sour well, a permit holder must do all of the following:

1. Ensure that a person certified in accordance with subsection (4) is available and equipped to ignite the well within the time limits set out in the plan in respect of which the emergency planning zone was determined;
2. Ensure that a dual ignition system is on site during:
   a. Drilling or completion operations, or
   b. Workover operations being carried out at any time when the wellhead is not in place;
3. Ensure that a person authorized to ignite flammable liquids or ignitable vapours released from the well is on site.
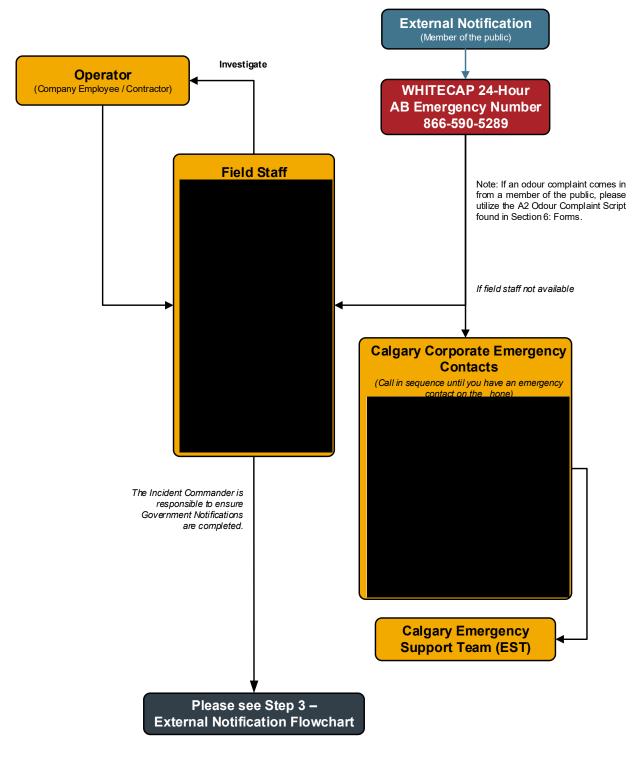
For the purposes of subsection (2), a sour well is special if either of the following applies:

1. The hydrogen sulphide release rate from the well is equal to or greater than 2.0 m^3/s;
2. The hydrogen sulphide release rate from the well is less than 2.0 m^3/s but greater than 0.5 m^3/s and the well is located within a distance that is twice the hazard planning distance from the corporate boundaries of an urban centre.

For the purposes of subsection (2) (a), the person must have vapour plume ignition certificate issued by a training association.

Note: *Refer to the Petroleum Industry Spill / Release Reporting Requirements in **Section 4: Emergency Response Procedures** for further spill reporting criteria and the Government Notification Matrix **in Section 5: External Agencies** for other reportable incidents.*

Internal Emergency Notification Flowchart:
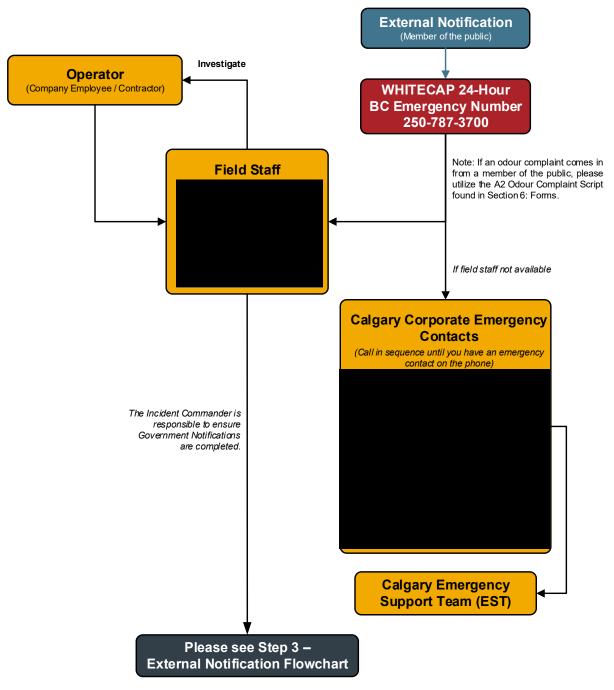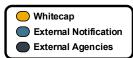
Alberta

External Notification
(Member of the public)

WHITECAP 24-Hour AB Emergency Number 866-590-5289

Operator
(Company Employee / Contractor)

Investigate

Field Staff

Note: If an odour complaint comes in from a member of the public, please utilize the A2 Odour Complaint Script found in Section 6: Forms.

If field staff not available

Calgary Corporate Emergency Contacts
(Call in sequence until you have an emergency contact on the phone)

The Incident Commander is responsible to ensure Government Notifications are completed.

Calgary Emergency Support Team (EST)

Please see Step 3 – External Notification Flowchart

- 🟠 Whitecap
- 🔵 External Notification
- ⬛ External Agencies

Note: After Initial Notifications are complete, please reference Step 4 – Incident Briefing and begin building the initial Organizational Structure (pg 3) within the ICS 201 Incident Briefing form.

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Internal Emergency Notification Flowchart:
British Columbia

External Notification
(Member of the public)

Operator
(Company Employee / Contractor)

Investigate

WHITECAP 24-Hour BC Emergency Number 250-787-3700

Field Staff

Note: If an odour complaint comes in from a member of the public, please utilize the A2 Odour Complaint Script found in Section 6: Forms.

If field staff not available

The Incident Commander is responsible to ensure Government Notifications are completed.

Calgary Corporate Emergency Contacts
(Call in sequence until you have an emergency contact on the phone)

Calgary Emergency Support Team (EST)

Please see Step 3 – External Notification Flowchart

● Whitecap
● External Notification
● External Agencies

Note: After Initial Notifications are complete, please reference Step 4 – Incident Briefing and begin building the initial Organizational Structure (pg 3) within the ICS 201 Incident Briefing form.

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WHITECAP RESOURCES LTD - NORTHERN AB & NORTHEAST BC PRODUCTION PHONE LIST
EMERGENCY RESPONSE 24 HOURS: (AB/SK) 1-866-590-5289 or (BC) 1-250-787-3700

Suite 3800, 525 Eighth Avenue SW, Calgary, AB T2P 1G1
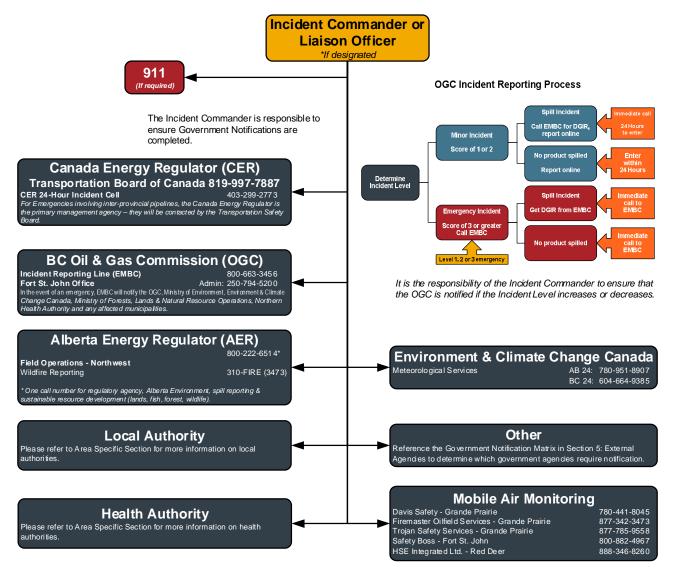
Name	Position	Office	Fax	Cell	Home	Email
CALGARY						
	VP Production					
	VP Operations					
	Operations Engineer - Deep Basin / Sturgeon / Wapiti					
	Operations Engineer - Boundary Lake & Valhalla					
	Operations Engineer - Kakwa / Karr / Montney					
	Facility Engineer					
	VP HSE					
	VP Production & Operations					

Name	Position	Office	Fax	Cell	Home	Email
FIELD						
	Field HSE Advisor - Boundary Lake / Deep Basin / Valhalla					
	Field HSE Advisor - Sturgeon / Wapiti					
	Area Superintendent					
	Foreman - Kakwa					
	Foreman - Deep Basin / Wapiti					
	Lead Operator - Boundary Lake					
	Lead Operator - Valhalla					
	Lead Operator - Sturgeon Lake					
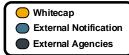
Revised: 21 March 2022

External Emergency Notification Flowchart

Prior to commencing contact of the agencies below, make sure a completed A1 Initial Emergency Report Form is available and at hand for reference.

Incident Commander or Liaison Officer
If designated

911
(If required)

The Incident Commander is responsible to ensure Government Notifications are completed.

OGC Incident Reporting Process

Determine Incident Level		

Minor Incident Score of 1 or 2
- **Spill Incident** Call EMBC for DGIR, report online → Immediate call 24 Hours to enter
- **No product spilled** Report online → Enter within 24 Hours

Emergency Incident Score of 3 or greater Call EMBC
- **Spill Incident** Get DGIR from EMBC → Immediate call to EMBC
- **No product spilled** → Immediate call to EMBC

Level 1, 2 or 3 emergency

It is the responsibility of the Incident Commander to ensure that the OGC is notified if the Incident Level increases or decreases.

Canada Energy Regulator (CER)
Transportation Board of Canada 819-997-7887
CER 24-Hour Incident Cell 403-299-2773
For Emergencies involving inter-provincial pipelines, the Canada Energy Regulator is the primary management agency – they will be contacted by the Transportation Safety Board.

BC Oil & Gas Commission (OGC)
Incident Reporting Line (EMBC) 800-663-3456
Fort St. John Office Admin: 250-794-5200
In the event of an emergency, EMBC will notify the OGC, Ministry of Environment, Environment & Climate Change Canada, Ministry of Forests, Lands & Natural Resource Operations, Northern Health Authority and any affected municipalities.

Alberta Energy Regulator (AER)
800-222-6514*
Field Operations - Northwest
Wildfire Reporting 310-FIRE (3473)

* One call number for regulatory agency, Alberta Environment, spill reporting & sustainable resource development (lands, fish, forest, wildlife).

Environment & Climate Change Canada
Meteorological Services AB 24: 780-951-8907
BC 24: 604-664-9385

Local Authority
Please refer to Area Specific Section for more information on local authorities.

Other
Reference the Government Notification Matrix in Section 5: External Agencies to determine which government agencies require notification.

Health Authority
Please refer to Area Specific Section for more information on health authorities.

Mobile Air Monitoring
Davis Safety - Grande Prairie	780-441-8045
Firemaster Oilfield Services - Grande Prairie	877-342-3473
Trojan Safety Services - Grande Prairie	877-785-9558
Safety Boss - Fort St. John	800-882-4967
HSE Integrated Ltd. - Red Deer	888-346-8260

Refer to Section 5: External Agencies for the Government Notification Matrix, Provincial Lead and Supporting Agencies and Federal Agencies required to be contacted or notified.

- ● **Whitecap**
- ● **External Notification**
- ● **External Agencies**

Note: After Initial Notifications are complete, please reference Step 4 – Incident Briefing and begin building the initial Organizational Structure (pg 3) within the ICS 201 Incident Briefing form.

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Step 4 – Incident Briefing

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Incident Name:	
Date/Time Initiated:	
Prepared By:	ICS Position:

Level of Emergency	Alert / Minor	Level 1	Level 2	Level 3

Map Sketch:

Note: Maps can be drawn or attached here.

Situation Summary: (Write description or attach A1)

Safety Briefing:

Step 4 – Incident Briefing

Current and Planned Objectives:

Priorities: (1) Life Safety (2) Incident Stabilization (3) Environment & Property

1. Ensure Safety of Citizens and Response Personnel:	**4. Minimize Economic Impacts:**
☐ 1a. Identify hazard(s) of released product.	☐ 4a. Consider tourism and local economic impacts.
☐ 1b. Establish site control (hot zone, warm zone, cold zone, & security).	☐ 4b. Protect public and private assets, as resources permit.
☐ 1c. Establish an Emergency Response Zone and Initiate Public Safety Actions.	☐ 4c. Establish damage claims process.
☐ 1d. Consider evacuations if needed.	**5. Keep Stakeholders and Public Informed of Response Activities:**
☐ 1e. Establish aircraft restrictions.	☐ 5a. Provide forum to obtain stakeholder input and concerns.
☐ 1f. Monitor air in impacted areas	☐ 5b. Provide stakeholders with details of response actions.
☐ 1g. Develop site safety plan for personnel and ensure safety briefings are conducted.	☐ 5c. Identify stakeholder concerns and issues, and address as practical.
2. Control the Source of the Release:	☐ 5d. Provide timely safety announcements.
☐ 2a. Complete emergency shutdown.	☐ 5e. Conduct regular news briefings.
☐ 2b. Conduct firefighting.	☐ 5f. Conduct public meetings, as appropriate.
☐ 2c. Initiate temporary repairs.	
3. Manage a Coordinated Response Effort:	
☐ 3a. Complete or confirm notifications.	
☐ 3b. Establish a unified command organization and facilities (command post, etc.).	
☐ 3c. Ensure mobilization and tracking of resources and account for personnel and equipment.	
☐ 3d. Complete documentation.	

Current and Planned Actions, Strategies and Tactics:

Time:	Actions:
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	

Current Organizational Structure: (draw in current response structure)*

*** This is a condensed Organizational Chart to account for all currently responding personnel during the Initial Response.**

Incident Commander
Name
Number

Information Officer
Name
Number

Liaison Officer
Name
Number

Safety Officer
Name
Number

On-Site Group Supervisor
Name
Number

Public Safety Group Supervisor
Name
Number

Documentation
Name
Number

SITE SAFETY
Name
Number

Air Monitors
Name
Number

Control
Name
Number

Roadblocks
Name
Number

Containment
Name
Number

Rovers
Name
Number

Other
Name
Number

Telephoners
Name
Number

Other
Name
Number

Reception Centre Representative
Name
Number

Other
Name
Number

Other
Name
Number

Note: Refer to ICS 207 Incident Organization Chart in Section 6: Forms (Blue Tab) for full command structure.

H₂Safety

Resources Summary:				
Resource(s)	**Time Called**	**ETA**	**On-Site**	**Notes (Location/Assignment/Status)**
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	

External Notifications: (Government)		
Agency	**Time Called**	**Notes**

Site Safety and Hazard Control Analysis

Site Control

1. Is Site Control set-up? ☐ Yes ☐ No	2. Is there an On-Scene Command Post? ☐ Yes ☐ No If so, where?
3. Have all personnel been accounted for? ☐ Yes ☐ No ☐ Don't Know	Injuries: Fatalities: Unaccounted: Trapped:
4. Are observers involved or rescue attempts planned? Observers: ☐ Yes ☐ No Rescuers: ☐ Yes ☐ No	5. Are decontamination areas setup? ☐ Yes ☐ No If so, where?

Hazard Identification, immediate signs of: (if yes, explain in remarks)

1. Electrical line(s) down or overhead? ☐ Yes ☐ No	2. Unidentified liquid or solid products visible? ☐ Yes ☐ No
3. Wind direction across incident: ☐ Towards your position Wind Speed: ☐ Away from your position	4. Is a safe approach possible? ☐ Yes ☐ No
5. Odours or smells? ☐ Yes ☐ No	6. Vapours visible? ☐ Yes ☐ No
7. Holes, ditches, fast water, cliffs, etc. nearby? ☐ Yes ☐ No	8. Fire, sparks, sources of ignition nearby? ☐ Yes ☐ No
9. Is local traffic a potential problem? ☐ Yes ☐ No	10. Product placards, colour codes visible? ☐ Yes ☐ No
11. Other Hazards? ☐ Yes ☐ No	12. As you approach the scene from the upwind side, do you note a change in the status of any of the above? ☐ Yes ☐ No

13. Remarks:

Hazard Mitigation: have you determined the necessity for any of the following?

1. Entry Objectives:

2. Warning sign(s), barriers, colour codes in place? ☐ Yes ☐ No

3. Hazardous material being monitored? ☐ Yes ☐ No
   3a. Sampling equipment:
   3b. Sampling location(s):
   3c. Sampling frequency:
   3d. Peak reading:
   3e. Personal exposure monitoring:

4. Protective gear / level: 4b. Respirators 4d. Boots:	4a. Gloves: 4c. Clothing: 4e. Chemical cartridge change frequency:

5. Decontamination
   5a. Instructions:
   5b. Decontamination equipment and materials:

6. Emergency escape route established? ☐ Yes ☐ No
   Route?

7. Field responders briefed on hazards? ☐ Yes ☐ No

8. Remarks:

Protective Zones: record initial control perimeters (see Figure 1)

Figure 1
Protective Zones

(Labels: Evacuation Route, Decontamination Station, Staging Area, Command Post, HAZARD, HOT ZONE, WARM ZONE, COLD ZONE, WIND DIRECTION)

1. Is there a Hot Zone established?
   ☐ Yes
   ☐ No
   If so, Where?

2. Is there a Warm Zone established?
   ☐ Yes
   ☐ No
   If so, Where?

3. Is there a Cold Zone established?
   ☐ Yes
   ☐ No
   If so, Where?

4. Remarks: (Include any information on evacuation route, etc.)

5. Include any site sketches or photos of the protective zones (if available):

Public Protection Measures Flowchart - AB

Is there potential for the release to impact beyond the lease, facility or pipeline right of way?

No → **No public protection measures required**

Yes →

Do any of the following apply:
- ❑ The release is expected to pass over quickly
- ❑ The public would be at a higher risk if evacuated
- ❑ There is not enough time or warning to safely evacuate the public
- ❑ The source and nature of the release has not been identified
- ❑ The release is an HVP product

No →
Evacuation
- ❑ Begin evacuating the public

Yes →
Shelter
- ❑ Begin sheltering the public

Refer to Evacuation Phone Message in either Section 2: Roles and Responsibilities or Section 6: Forms

Refer to Shelter-in-Place Phone Message in either Section 2: Roles and Responsibilities or Section 6: Forms

> Evacuation begins in the IIZ and expands outwards into the PAZ downwind of the release so that members of the public are not exposed to the hazard.

IIZ
Initial Isolation Zone
If safe to do so, the licensee must evacuate public from the IIZ.

PAZ
Protective Action Zone
Evacuation / Shelter-in-Place all public downwind of the incident

EPZ
Emergency Planning Zone
Giving priority to those who have special needs and / or have requested early notification

Modified EPZ
Emergency Planning Zone
Any public that are outside the calculated EPZ that may be effected.

Ignition must take place when one of the following conditions have been met:
- ❑ Although required, evacuation of the response zones has not taken place.
- ❑ H2S concentrations in excess of 10 ppm over a 3-minute average in unevacuated parts of the EPZ.
- ❑ H2S concentrations exceed 1 ppm per one hour average in urban density developments.
- ❑ Monitoring is not taking place due to weather or other unforeseen circumstances.
- ❑ The release cannot be brought under control in the short term.

    AND
- ❑ Personnel working at the site can be cleared to a safe distance.

Has ignition criteria been met?

No →

Yes →
Refer to the H2S / HVP Ignition Procedure behind the Public Protection Measures tab in Section 4: Emergency Response Procedures

> **Is there an urban centre within the EPZ?**
>
> **Yes** →
>
> **Notify the Director of Emergency Management and the Health Authority.**

No →
- ❑ Continue air monitoring
- ❑ Continue evacuation / shelter procedures

Yes →
- ❑ Continue air monitoring for H2S from incomplete combustion, as well as SO2
- ❑ Continue evacuation / shelter procedures

Is there potential for the release to impact the public outside of the EPZ?

No →
- ❑ Continue air monitoring
- ❑ Continue evacuation / shelter procedures in the EPZ

Yes →
- ❑ Work with local authority to determine the need for evacuation / shelter outside of the EPZ
- ❑ Continue air monitoring

Evacuation Requirements

Revised November 2021

> For a sour gas release, the licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H2S and SO2. In the absence of monitored readings, responders should advise the residents to Shelter-in-Place.

H2S Requirements	
1 to 10 ppm (3 minute average)	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H2S must be notified.
Above 10 ppm (3 minute average)	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter

* If monitored levels over the 3 minute interval are declining (i.e., three readings show a decline from 15 ppm to 10 ppm to 8 ppm over 3 minutes), evacuation may not be necessary even though the average over the 3 minute interval would be 11 ppm. Licensees should use proper judgement in determining if evacuation is required.

SO2 Requirements	
0.3 ppm (24-hour average)	
1 ppm (3-hour average)	Immediate evacuation of the area must take place.
5 ppm (15-minute average)	

Note: This section is based on Alberta Regulations; however, the same standards will be followed by the company for operations in other provinces.

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Public Protection Measures Flowchart - BC

Is there potential for the release to impact beyond the lease, facility or pipeline right of way?

No → Continue with control / containment measures

Yes

Do any of the following apply:
- The release is expected to pass over quickly
- The public would be at a higher risk if evacuated
- There is not enough time or warning to safely evacuate the public
- The source and nature of the release has not been identified
- The release is an HVP product

No

Evacuation
- Begin evacuating the public

Refer to Evacuation Phone Message in either **Section 2: Roles and Responsibilities** or **Section 6: Forms**

Yes

Shelter
- Begin sheltering the public

Refer to Shelter-in-Place Phone Message in either **Section 2: Roles and Responsibilities** or **Section 6: Forms**

Evacuation begins closest to incident and expands outward downwind of the release so that members of the public are not exposed to the hazard.

Closest to Incident
If safe to do so, the licensee must evacuate public closest to the incident.

Downwind
Evacuation / Shelter-in-Place all public downwind of the incident

HPZ
Hazard Planning Zone
Giving priority to those who have special needs and / or have requested early notification

Modified HPZ
Hazard Planning Zone
Any public that are outside the calculated HPZ that may be effected.

Ignition must take place when one of the following conditions have been met:
- Although required, evacuation of the response zones has not taken place.
- H_2S concentrations in excess of 10 ppm over a 3-minute average in unevacuated parts of the EPZ.
- H_2S concentrations exceed 1 ppm per one hour average in urban density developments.
- Monitoring is not taking place due to weather or other unforeseen circumstances.
- The release cannot be brought under control in the short term (ignition decision will be made by Incident Commander. Notify Regulatory Agency intention to ignite.

  AND
- Personnel working at the site can be cleared to a safe distance.

Has ignition criteria been met?

No

Is there an urban centre within the HPZ?

Yes

Notify the Director of Emergency Management and the Health Authority.

- Continue air monitoring for H_2S
- Continue evacuation / shelter procedures

Yes

Refer to the H_2S / HVP Ignition Procedure behind the Public Protection Measures tab in **Section 4: Emergency Response Procedures**

- Continue air monitoring for H_2S from incomplete combustion, as well as SO_2
- Continue evacuation / shelter procedures

Is there potential for the release to impact the public outside of the HPZ?

No
- Continue air monitoring for H_2S or SO_2
- Continue evacuation / shelter procedures in the HPZ

Yes
- Work with local authority to determine the need for evacuation / shelter outside of the HPZ
- Continue air monitoring for H_2S or SO_2

Note: Evacuation outside the HPZ is based on air monitoring readings and not the level of emergency.

Notification and Evacuation Requirements Outside of the HPZ

For a sour gas release, the licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H_2S and SO_2. In the absence of monitored readings, responders should advise the residents to Shelter-in-Place.

H_2S Requirements	
1-10 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H_2S or SO_2 must be notified.
10 ppm and above (1-hour average)	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.

Note: H_2S Evacuation Level – when downwind monitoring at the nearest unevacuated residence, outside the Hazard Planning Zone, indicates a level of 10 ppm, evacuation procedures will be initiated if safe to do so.

SO_2 Requirements	
1-5 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H_2S or SO_2 must be notified.
5 ppm and above	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.

Revised November 2021

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Section 2: Roles and Responsibilities

Field Response Team

Key Response Personnel

General Safety Equipment and Resource Lists

    Operator, Truck & Other Safety Equipment

Response Team Structure

    Quick Reference Guide – Emergency Support Team (EST)

Field Response Team – Command Staff

    Command Staff Roles Chart

Field Response Team – General Staff

    Operations Section Roles Chart
    Planning Section Roles Chart
    Logistics Section Roles Chart
    Finance / Admin. Section Roles Chart

Field Response Team – Public Safety Staff

    Public Safety Roles Chart
    Air Monitors Module
    Reception Centre Rep Module
    Roadblocks Module
    Rovers Module
    Telephoners Module

Ongoing Response
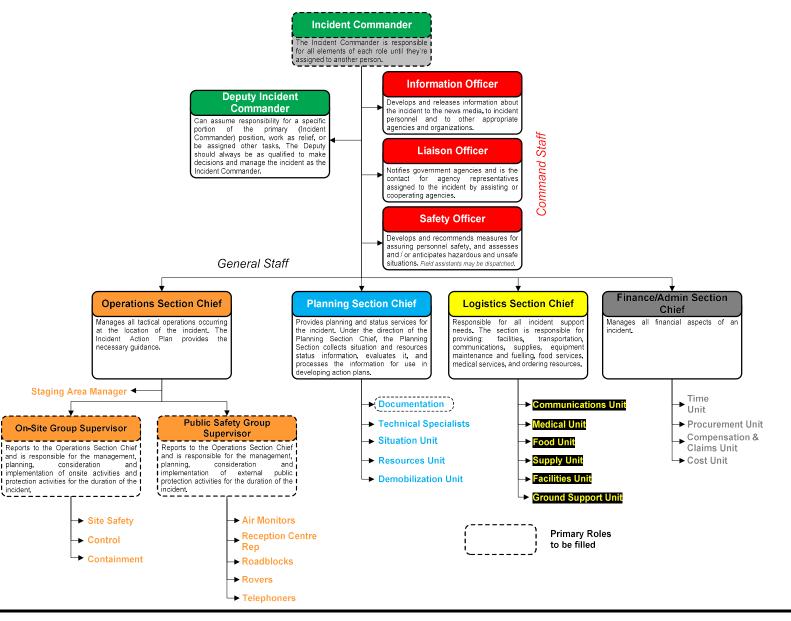
    Planning "P"
    Five Step Ongoing Response Guide
    Objectives Meeting
    Tactics Meeting
    Planning Meeting
    Operations Briefing

Response Teams Phone List

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Field Response Team

Incident Commander
The Incident Commander is responsible for all elements of each role until they're assigned to another person.

Information Officer
Develops and releases information about the incident to the news media, to incident personnel and to other appropriate agencies and organizations.

Deputy Incident Commander
Can assume responsibility for a specific portion of the primary (Incident Commander) position, work as relief, or be assigned other tasks. The Deputy should always be as qualified to make decisions and manage the incident as the Incident Commander.

Liaison Officer
Notifies government agencies and is the contact for agency representatives assigned to the incident by assisting or cooperating agencies.

Command Staff

Safety Officer
Develops and recommends measures for assuring personnel safety, and assesses and / or anticipates hazardous and unsafe situations. *Field assistants may be dispatched.*

General Staff

Operations Section Chief
Manages all tactical operations occurring at the location of the incident. The Incident Action Plan provides the necessary guidance.

Planning Section Chief
Provides planning and status services for the incident. Under the direction of the Planning Section Chief, the Planning Section collects situation and resources status information, evaluates it, and processes the information for use in developing action plans.

Logistics Section Chief
Responsible for all incident support needs. The section is responsible for providing: facilities, transportation, communications, supplies, equipment maintenance and fuelling, food services, medical services, and ordering resources.

Finance/Admin Section Chief
Manages all financial aspects of an incident.

Staging Area Manager

On-Site Group Supervisor
Reports to the Operations Section Chief and is responsible for the management, planning, consideration and implementation of onsite activities and protection activities for the duration of the incident.

Public Safety Group Supervisor
Reports to the Operations Section Chief and is responsible for the management, planning, consideration and implementation of external public protection activities for the duration of the incident.

- Documentation
- Technical Specialists
- Situation Unit
- Resources Unit
- Demobilization Unit

- Communications Unit
- Medical Unit
- Food Unit
- Supply Unit
- Facilities Unit
- Ground Support Unit

- Time Unit
- Procurement Unit
- Compensation & Claims Unit
- Cost Unit

- Site Safety
- Control
- Containment

- Air Monitors
- Reception Centre Rep
- Roadblocks
- Rovers
- Telephoners

Primary Roles to be filled

Section 2: Roles and Responsibilities

Key Response Personnel

The following individuals are likely to fill the key response roles identified:

Command Staff	Incident Commander	Area Superintendent Area Foreman (Alternate Incident Commander)
On-Site	On-Site Group Supervisor	Lead Operators Please see the **Response Teams Phone List (Yellow tab)** or **Area Specific Information (White tabs)** for a list of Area Operators.
	Trained in Ignition (H$_2$S & HVP)	Lead Operator
Public Safety	Public Safety Group Supervisor	Area Foreman Area Superintendent
	Air Monitors / Roadblock / Rovers	Area Operators Please see the **Response Teams Phone List (Yellow tab)** or **Area Specific Information (White tabs)** for a list of Area Operators.
	Telephoners	Operations Technician H2Safety Services
	Reception Centre Representative	Area Operators Please see the **Response Teams Phone List (Yellow tab)** or **Area Specific Information (White tabs)** for a list of Area Operators.
Emergency Support Team (EST)	EOC Director	VP Engineering VP Production
	Communications / Media	President & CEO

Please refer to the **Response Teams Phone List (Yellow tabs)** or **Area Specific Information (White tabs)** for the full list of personnel and their contact information.

General Safety Equipment and Resource Lists
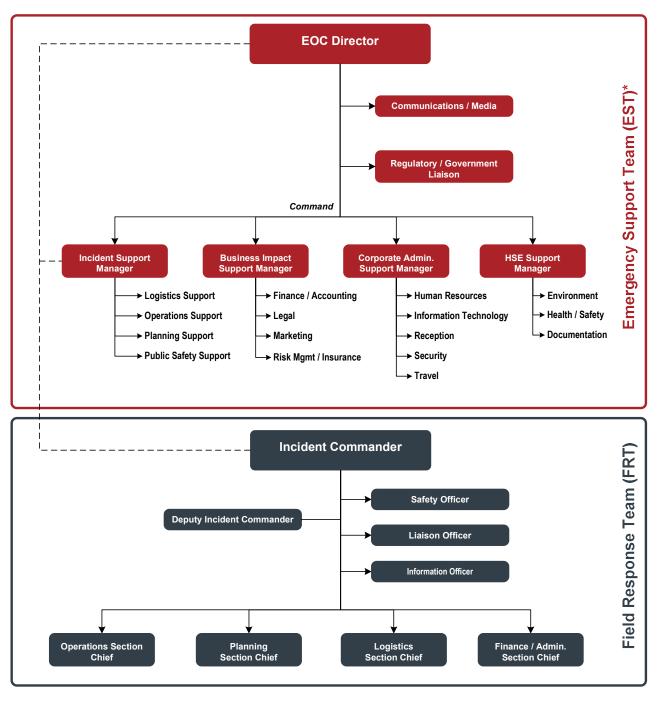
Operator, Truck & Other Safety Equipment

Each operator is required to drive a suitable vehicle (4x4 truck) for their service areas and should carry the following equipment: 20-30lb fire extinguisher, vehicle emergency roadside kit, cell phone and a 4 head monitor.

Refer to **Area Specific Information Section (white tabs)** for further details on specific air monitoring equipment, back-up communication methods, ignition and roadblock kit contents as well as their locations, specialty fire-fighting equipment and/or service companies and their contact information for if the aforementioned equipment is not available.

Response Team Structure

Quick Reference Guide – Emergency Support Team (EST)

(Located at the Corporate Emergency Operations Centre)

The **EOC Director** is responsible for all elements of each role until they're assigned to another person. Below are brief descriptions of each of the key roles that the EOC Director might choose to assign right away.

EOC Director	The EOC Director is responsible for coordination of response efforts from corporate to support the Field Response Team (FRT) and for efforts to ensure business continuity during the incident. The EOC Director determines the level of activation of the Emergency Support Team (EST) and assigns all positions to meet the required level of activation.
Communications & Media	Serves as the coordination point for all public information, media relations and internal information sources. Communications & Media is responsible for preparing the FRT and the EST to deal successfully with internal and external communication.
Regulatory / Government Liaison	Provides regulatory guidance and advice to the EST as well as to be a liaison between responding government agencies and the company. The Regulatory / Government Liaison is responsible for providing support to the field Liaison Officer.
Incident Support Manager	The Incident Support Manager is the main link between the FRT and the EST and is the main informant for the EST. The Incident Support Manager speaks directly with the field Deputy Incident Commander, if assigned, or the field Incident Commander. The Incident Support Manager provides operational, public safety, planning and logistics advice and support to assist the FRT with developing an effective field Incident Action Plan (IAP).
Business Impact Support Manager	The role of business impact is to identify and work to mitigate all of the negative impacts of the incident on the business as well as to provide business advice and support. The Business Impact Support Manager provides support to the company in the areas of finance / accounting, legal, marketing, risk management and insurance.
Corporate Admin Support Manager	The Corporate Admin Support Manager provides administrative and technical support to the company in the areas of human resources, information technology, travel, security and reception.
Health, Safety & Environment Support Manager	The Health, Safety & Environment Support Manager is responsible for providing Health, Safety & Environmental support to the FRT. The Health, Safety & Environment Support Manager is also responsible for managing the health / safety / environmental / planning / documentation activities of the EST.

Command Staff Roles

Incident Commander	Deputy Incident Commander	Information Officer	Liaison Officer	Safety Officer
The **Incident Commander** is in charge of overall management of the incident and must be fully qualified to manage the incident. **As incidents grow in size or complexity, a more highly qualified Incident Commander** may be assigned by the company. *Note: The highest ranking authority arriving at the site of the incident (first on-scene) becomes the Incident Commander and establishes command and control. The first on-scene will remain the Incident Commander until there is formal transfer of command to a more senior company employee and / or qualified personnel.*	The **Deputy Incident Commander** may assume responsibility for a specific portion of the primary position, work as relief, or be assigned other tasks. The **Deputy** should always be as qualified to make decisions and manage the incident as the **Incident Commander**.	The field **Information Officer** will work closely with the Corporate Calgary Media Spokesperson regarding the incident and will get direction on releases to the media and incident personnel.	The **Liaison Officer** is responsible for notifying government agencies and is the contact for agency representatives assigned to the incident by assisting or cooperating agencies.	The **Safety Officer** develops and recommends measures for assuring personnel safety, and assesses and / or anticipates hazardous and unsafe situations.

Incident Commander

Initial Response - *Refer to the 5 Step Initial Response Guide in Section 1: Initial Response*

Step 1: Level of Emergency

❑ If necessary, investigate and confirm the emergency. If the incident involves a release of sour product, the investigation should be conducted in teams of two. Take appropriate safety precautions (PPE, SCBA, etc.). Ensure personal safety at all times.

❑ Determine the Level of Emergency using the OGC Incident Classification Matrix for BC or AER's Assessment Matrix for Classifying Incidents for all other provinces (e.g. Alert/Minor, Level 1, 2, 3) found in **Section 1: Initial Response** or using the Emergency Assessment SmartPhone App. (Search H_2Safety or Emergency Assessment in the App Store).

Step 2: Internal Notification

❑ Follow the Internal Emergency Notification Flowchart outlined in Section 1: Initial Response to contact required field resources. Refer to the **Section 2: Roles and Responsibilities / Response Team Phone List**. Relay the information from the A1 Initial Notification Form. Mobilize internal resources to the site, to the Incident Command Post (ICP) or place them on standby as required.

❑ Contact required company resources and communicate the level of emergency. Refer to **Section 2: Roles and Responsibilities / Response Team Phone List.**

Step 3: External Notification

❑ Follow the External Emergency Notification Flowchart in **Section 1: Initial Response** for communication structure and the Provincial Notification Matrix in **Section 5: External Agencies** to determine which external agencies need to be notified. Reference **Section 5: External Agencies** and the **Area Specific Information** for the location of the incident.

Step 4: Incident Briefing

❑ The following positions are always filled regardless of the size of the incident: **Incident Commander**, **On-Site Group Supervisor** and **Documentation**.

❑ Assess the situation, identify the incident source, and consider how to stop the source. Carry out a site assessment that includes the following: identify hazardous materials, evaluate risk to workers and the public, determine the potential for the incident to escalate, identify safety concerns, determine which other company's facilities are involved.

❑ Detail and prioritize the objectives for the next operational period taking into consideration the **priorities of (1) Life Safety, (2) Incident Stabilization, (3) Property & Environment** using the ICS 201 Incident Briefing Form. [Form ICS 201]

❑ Assign other positions as required to meet the identified objectives. Review and complete the ICS 207 Incident Organization Chart in **Section 6: Forms**. Depending on the scale of emergency, all positions may not be assigned. The **Incident Commander** assumes responsibility for all unassigned roles until personnel have been assigned to them. [Form ICS 207]

❑ Conduct a role review with each of the positions above to ensure they clearly understand their roles and responsibilities.

❑ Develop detailed plans of action (strategies) to achieve the objectives and determine what tactics and resources are required to implement the strategies (oil spill services, safety services, etc.).

❑ Activate the Incident Command Post (ICP). Refer to the **Appendices** for Incident Command Post activation guidelines.

❑ Ensure the **Planning Section** posts and updates the status board with incident details.

Step 5: Public Safety

❑ Determine the size of the Emergency Planning and Response Zones around the incident. Refer to the EPZ calculation tables and map in **Area Specific Information**.

❑ Use the Public Protection Measures Flowchart located in **Section 1: Initial Response** to assist with determining if evacuation / shelter / ignition are required.

❑ Ensure the affected public are contacted and advised to shelter or evacuate as required.

❑ Establish **Air Monitoring, Reception Centre Representatives, Roadblocks, Rovers**, and **Telephoners** as required.

Ongoing Response - *Refer to the Five Step Ongoing Response Guide in Section 2: Ongoing Response*

❑ Establish a method to track responders and resources to ensure they are accounted for at all times.

❑ Monitor implementation of IAP and revise as the situation dictates. Prepare for next operational period.

❑ Support the **Operations Section Chief** in the preparation of an incident control and containment action plan.

❑ Ensure each section chief has adequate staff, is not violating span of control and clearly understands the roles and responsibilities.

❑ Conduct frequent Command Staff and General Staff meetings and regularly update the Emergency Support Team.

❑ If transfer of command occurs, an incident status briefing must take place. Provide all documentation and review situation status, objectives and priorities, current organization and resources, facilities, communications plan, concerns and introductions to staff.

❑ As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator.

❑ The **Demobilization Unit** will develop and implement objectives/strategies for demobilization.

Deputy Incident Commander

❑ If no scribe has been assigned to the **Incident Commander**, support the **Incident Commander** by documenting details of the emergency, focusing on activities and decisions made.

❑ Record, update and maintain a chronological summary of the incident including:

  ❑ Names of personnel in each assigned position and their location

  ❑ Control and containment measures

  ❑ Environmental monitoring information

  ❑ Injuries / deaths / missing persons

  ❑ Phone calls

  ❑ Actions and decisions

  ❑ Status of the public protection actions

❑ Manage the flow of traffic to and communication with the **Incident Commander** so that he can focus on managing the incident.

❑ Conduct status update meetings.

❑ Provide status to head office.

❑ Deal with some day-to-day decision making.

❑ Assume duties of the **Incident Commander**, if required.

❑ Maintain communication with the **Incident Commander**.

Important

Prior to beginning any activities, each person in a role must:

❑ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the **Incident Commander**.

Throughout the duration of the incident, each person in a role must:

❑ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in **Section 6: Forms**.

After the incident is over, each person in a role must:

❑ Assist with post-incident activities.

All forms referenced can be found in Section 6: Forms

Information Officer

❑ Receive incident briefing from the **Incident Commander**.

❑ Prepare regular status updates that will be provided to internal company personnel to keep them apprised of the situation.

❑ Identify and document any media involvement that has already taken place.

❑ If the media statement hasn't yet been prepared, ensure that the generic media statement from the ERP is communicated and being used in the field.

❑ Assist head office with the preparation of a preliminary media statement if required using the Preliminary Media Statement form. Calgary Head Office to release all formal media statements. [Form C1]

❑ Document all communications with the media using the Media Contact Log. [Form C2]

❑ Designate and prepare media briefing rooms away from the Incident Command Post.

❑ Organize tours and photo opportunities if required.

❑ Maintain communication with the **Incident Commander**.

❑ If necessary, coordinate with and use broadcast media to notify residents in the hazard area. Calgary Head Office must approve this prior to activation.

❑ Work with Calgary Head Office Communications / Media department to develop a communications plan that includes establishing protocols for responders and all company personnel as required to ensure incident information remains confidential (i.e. restriction on cell phone usage for photography, social media, speaking to the media, etc.).

Liaison Officer

❑ Complete Regulatory First Call Communication Form. [Form A3]

❑ Refer to **Section 5: External Agencies** for the Government Notification Matrix. Notify as soon as possible and provide status updates at agreed upon intervals to:

  ❑ Government regulator

  ❑ Local authorities (counties, cities, towns, MDs, RDs, First Nations Reserves, etc.)

  ❑ Health authority

  ❑ Environment

  ❑ Provincial emergency management organization

  ❑ Other agencies

❑ Keep track of all government correspondence using the Government Agency Contact Log. [Form C3]

❑ Obtain cooperating and assisting agency information that includes: contact information, radio frequencies, cooperative agreements, equipment type, number of personnel, condition of equipment and personnel, agency constraints, etc.

❑ Conduct appropriate periodic briefings to keep agencies informed of planning actions.

❑ Coordinate with any government agency representatives attending the ICP or REOC.

❑ Coordinate with mutual aid groups.

Safety Officer

❑ Ensure the site is evacuated if unsafe.

❑ Initiate rescue plans if safe to do so.

❑ Review the Incident Action Plan to identify and correct any potential occupational and health hazards.

❑ Ensure work / rest guidelines are followed.

❑ Continuously monitor workers for exposure to ensure they are wearing the required PPE.

❑ Take appropriate action to mitigate or eliminate unsafe conditions, operations, or hazards.

❑ Immediately stop any unsafe practices.

❑ Conduct a general inspection of the facilities, food services and sanitation services soon after they become operational and follow up on a periodic basis throughout the incident for compliance to all health and safety standards. Provide a report of deficiencies.

❑ Document both safe and unsafe acts, corrective actions taken on the scene, accidents or injuries, and ways to improve safety on future incidents.

❑ Investigate accidents that have occurred within the incident area.

❑ Identify "Hot Zone" and declare when responders may enter it.

❑ Ensure that responders inside the "Hot Zone" are accounted for and initiate search if required.

❑ Prepare a site-specific health and safety plan.

All team members are located at the Incident Command Post (ICP), unless otherwise noted.

Revised October 2018

Escalate, Downgrade or Stand-Down Levels of Emergency: As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. **Emergency Follow-up**: Once the emergency is over, the area residents, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

General Staff Roles – Operations Section

Operations Section Chief	On-Site Group Supervisor	Staging Area Manager	Site Safety	Control	Containment
The **Operations Section Chief** is responsible for managing all tactical operations occurring at the location of the incident. The Incident Action Plan provides the necessary guidance. The need to expand the **Operations Section** is generally dictated by the number of tactical resources involved and is influenced by span of control considerations.	**On-Site Group Supervisor** is responsible for coordinating all activities of **Control**, **Containment** and **Site Safety** at the scene of the emergency / incident.	The **Staging Area Manager** is responsible for managing all activities within a Staging Area.	**Site Safety** is responsible for responder safety and safety advice at all times at the scene of the emergency / incident.	**Control** is responsible for implementing measures designed to bring the incident under control or stop the incident.	**Containment** is responsible for implementing measures designed to reduce the impact of the incident on and prevent the spread of the incident to the surrounding areas.

Operations Section Chief	On-Site Group Supervisor	Staging Area Manager	Site Safety	Control	Containment

❑ Identify and confirm communication links.
❑ Ensure the On-Site Command Post (OSCP) is established.
❑ Manage the following positions, as required: **On-Site Group Supervisor**, **Public Safety Group Supervisor.**
❑ In conjunction with the **Incident Commander**, the **Planning Section Chief**, and the **Public Safety Group Supervisor**, develop and implement an Incident Action Plan (IAP).
❑ Ensure responder safety at all times.
❑ Oversee control / containment procedures; ensure the hazard is isolated.
❑ Determine the current and potential environmental impact of product released, response activities, or waste disposal.
❑ Ensure that all environmental laws and regulations are complied with during emergency response operations.
❑ Provide technical advice to **Incident Commander** to determine public protection measures.
❑ Assess the requirements for on-site safety supervision, personnel, equipment, and other contract services. Coordinate with **Logistics** to obtain equipment and resources.
❑ Assist the **On-Site Group Supervisor** in determining whether ignition is appropriate. If at all possible, input is to be obtained from the **Incident Commander**, the **EOC Director** and the applicable government regulator.
❑ Maintain continuous communications with the **Incident Commander**.
	❑ Ensure all personnel are accounted for. Release nonessential personnel from the site.
	❑ Oversee and maintain control of all on-site personnel.
	❑ Establish On-Site Command Post (OSCP).
	❑ Obtain incident briefing and environmental impact information.
	❑ Coordinate activities of **Staging Area Manager, Site Safety, Control** and **Containment.**
	❑ Report air monitoring to **Incident Commander** (third party and regulatory).
	❑ Call police, fire and ambulance as needed.
	❑ Coordinate with ambulance / fire / RCMP / regulatory agencies / spill co-ops.
	❑ Conduct meetings with on-site personnel to review action plans, communication and safety.
	❑ Request additional resources needed to implement on-site response actions.
	❑ Supervise the execution of the on-site response actions.
	❑ The **On-Site Group Supervisor** has the authority to ignite the release if ignition criteria are met. If at all possible, the **On-Site Group Supervisor** must consult with higher authority individuals within the company (ideally the **Operations Section Chief**, **Incident Commander, EOC Director**, etc.) and the applicable government regulator before making the decision to ignite a release. Refer to **Section 4: Emergency Response Procedures**.
		❑ Establish a staging area near the incident site and outside of the EPZ. When choosing a site for the staging area ensure the following conditions are met:
		  ❑ Adequate sized site that is stable and level with suitable access roads
		  ❑ No entry problems such as narrow approach ways, gates, power lines, buried pipelines, etc.
		  ❑ Approval has been received from landowner
		  ❑ Reception of communication equipment is adequate
		❑ Erect staging area information and directional signs to the staging area, if required.
		❑ Flag the perimeter of the staging area.
		❑ Obtain an office trailer and emergency lighting, if required.
		❑ Coordinate traffic and maintain a log of personnel and services dispatched to, or arriving from the site of the emergency. Communicate this information to the **Logistics Section Chief**.
		❑ Respond to **Operations Section Chief** or **Incident Commander** requests for resources.
		❑ Confirm all workers have required training before they are dispatched to the incident.
		❑ Maintain and provide status to the **Planning Section** of all resources in Staging Area.
		❑ Demobilize or move Staging Area as required.
			❑ Assess hazards & potential risks e.g. fire/explosion, toxicity, oxygen deficiency, ignition sources, access/egress.
			❑ Ensure responder safety at all times.
			❑ Ensure that on-site personnel are taking appropriate safety actions: PPE, SCBA / SABA, Safe Work Procedures, proper grounding / bonding procedures, work in teams, etc.
			❑ Maintain security of the site to ensure authorized personnel are allowed access and to protect response personnel.
			❑ Ensure security of any evidence for investigative purposes.
			❑ Ensure workers that show signs of stress, fatigue, and other symptoms are demobilized and sent for treatment if necessary.
			❑ Maintain records of all injuries and on-site medical treatments.
			❑ Conduct responder safety orientations.
			❑ Monitor activities and conduct a head count on a regular basis.
			❑ Continually evaluate risks and stop unsafe activities immediately.
			❑ Recommend alternatives for activities that are considered to be unsafe.
				❑ Assist with the development of control procedures.
				❑ Identify immediate response tactics (i.e. offensive / defensive response tactics). Only when safety is assured, take immediate operational actions to bring the incident under control (i.e. shut down, isolate, de-pressure, etc.).
				❑ Provide or seek technical / engineering advice around all control-related issues.
				❑ Inform **Operations Section Chief** of any interactions with regulatory agencies or environmental personnel.
					❑ Assist with the development of containment procedures.
					❑ Identify immediate response tactics (i.e. offensive / defensive response tactics). Only when safety is assured, take actions to contain the incident so as to prevent the incident from spreading offsite and to reduce the impact on the public, sensitive terrain, watercourses, etc.
					❑ Provide or seek technical / engineering advice around all containment-related issues.
					❑ Secure the scene and restrict access to essential and authorized personnel only.
					❑ Inform **Operations Section Chief** of any interactions with regulatory agencies or environmental personnel.
					❑ Coordinate oil spill cooperative activities (booms, dams, etc.).

Important

Prior to beginning any activities, each person in a role must:
❑ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the **Incident Commander**.

Throughout the duration of the incident, each person in a role must:
❑ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in **Section 6: Forms**.

After the incident is over, each person in a role must:
❑ Assist with post-incident activities.

All forms referenced can be found in Section 6: Forms

Revised November 2021

Located at the Incident Command Post (ICP)	Located at the On-Site Command Post (OSCP)	Located at the Staging Area	Located at the On-Site Command Post (OSCP)	Located at the On-Site Command Post (OSCP)	Located at the On-Site Command Post (OSCP)

Escalate, Downgrade or Stand-Down Levels of Emergency: As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. **Emergency Follow-up**: Once the emergency is over, the area residents, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

General Staff Roles – Planning Section

Planning Section Chief	Documentation Unit	Technical Specialists Unit	Situation Unit	Resources Unit	Demobilization Unit
The **Planning Section Chief** is responsible for providing planning and status services for the incident. Under the direction of the **Planning Section Chief**, the Planning Section collects situation and resources status information, evaluates it, and processes the information for use in developing action plans. Dissemination of information can be in the form of the Incident Action Plan, formal briefings, or through map and status board displays.	The **Documentation Unit** is responsible for the maintenance of accurate, up-to-date incident files. Duplication services will also be provided by the **Documentation Unit**.	Certain incidents or events may require the use of **Technical Specialists** who have specialized knowledge and expertise. **Technical Specialists** may function within the Planning Section, or be assigned wherever their services are required.	The collection, processing, and organization of all incident information. The **Situation Unit** may prepare future projections of incident growth, maps, and intelligence information.	The **Resources Unit** is responsible for maintaining the status of all assigned resources at an incident.	The **Demobilization Unit** is responsible for developing the Incident Demobilization Plan.

Planning Section Chief	Documentation Unit	Technical Specialists Unit	Situation Unit	Resources Unit	Demobilization Unit

❑ Identify and confirm communication links.
❑ Assign personnel to assume the following positions, as required: **Documentation, Technical, Situation, Resources**, and **Demobilization**.
❑ Assist with setup of the Incident Command Post.
❑ Review the details of the incident and support the **Incident Commander** with the development of a preliminary response strategy.
❑ Identify the need for technical specialists.
❑ Collect and analyze information on the current situation, prepare situation displays and situation summaries, and develop maps and projections.
❑ Establish special information collection activities as necessary, e.g., weather, environmental, toxics, etc.
❑ Provide technical support to the **Incident Commander** and work with **Incident Commander** to develop the Incident Action Plan (IAP).
❑ Review any changes to the Incident Action Plan (IAP) to ensure consistency.
❑ Assemble information on alternative strategies.
❑ Coordinate with **Logistics** to determine current available resources and resource availability for future plans of action.
❑ Establish reporting schedules.
❑ Conduct long-range and / or contingency planning.
❑ Develop plans for demobilization.
❑ Maintain continuous communications with the **Incident Commander.**
	❑ Document the Incident Action Plan (IAP) strategies using the ICS 201 Incident Briefing Form provided **in Section 1: Initial Response** or **Section 6: Forms** and disseminate them to all key responders.
	   ❑ Be prepared to document the **Incident Commander's** status update meetings using whiteboards, PC or Action Logs.
	❑ Ensure consistent documentation.
	❑ Ensure timely dissemination of all documentation.
	❑ Participate in planning meetings, capturing key information, decisions made, commitments and status.
	❑ Collect documentation from response team members and maintain a consistent system for organizing the data.
	   ❑ Records must be held for a minimum of 5 years as it may be requested by the regulatory agency at any point during that time.
	❑ Establish duplication services.
	❑ Incident files will be stored for legal, analytical, and historical purposes.
	❑ Post and maintain all Emergency Status Boards and other laminated charts in the Incident Command Post.
		❑ Determine what technical support is available now and in the future.
		❑ Work with **Logistics** to determine the key locations for the required technical support and appropriate time to acquire.
		❑ Gather data (weather, etc.) and forecast changes considering incident potential and develop new or modified response strategies.
		❑ As required, obtain plume dispersion modelling.
			❑ Collect and evaluate information to establish an accurate picture of the situation and creates a detailed summary. Use this information to create maps and projections.
			❑ Prepare, post, or disseminate resources and situation status information as required, including special requests.
			❑ Provide photographic services and maps if required.
				❑ Monitor the status and location of all incident resources / personnel responding to the incident.
				❑ Oversee the check-in of all resources.
				❑ Maintenance of a master list of all resources, e.g., key supervisory personnel, primary and support resources, etc.
				❑ May assist in preparing the written Incident Action Plan.
				❑ Maintain and post the current status and location of all resources.
					❑ Prepare plan for the demobilization of all personnel and equipment upon resolution of the incident.
					❑ Ensure resources in available status are still required. Identify surplus resources and probably release time.
					❑ Debrief non-required resources and dismiss resources being demobilized.
					❑ Coordinate demobilization with agency representatives.
					❑ Develop incident check-out function for all units.
					❑ Ensure the demobilization process is organized, safe and cos effective.

Form ICS 201 / Form ICS 214 (Documentation Unit references)

Form ICS 202 / Form ICS 214 / Form ICS 215 / Form ICS 215a / Form ICS 230 (Planning Section Chief)

Form ICS 201 / Form ICS 214 / Form ICS 231 / Form ICS 233 (Documentation Unit)

Form ICS 201 / Form ICS 209 / Form ICS 214 (Situation Unit)

Form ICS 203 / Form ICS 204 / Form ICS 207 / Form ICS 211 / Form ICS 214 (Resources Unit)

Form ICS 214 / Form ICS 221 (Demobilization Unit)

Important

Prior to beginning any activities, each person in a role must:
❑ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the **Incident Commander**.

Throughout the duration of the incident, each person in a role must:
❑ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in **Section 6: Forms**.

After the incident is over, each person in a role must:
❑ Assist with post-incident activities.

All forms referenced can be found in Section 6: Forms

All team members are located at the Incident Command Post (ICP), unless otherwise noted.

Revised October 2018

Escalate, Downgrade or Stand-Down Levels of Emergency: As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. **Emergency Follow-up**: Once the emergency is over, the area residents, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

General Staff Roles – Logistics Section

Logistics Section Chief	Communications Unit	Medical unit	Food Unit	Supply Unit	Facilities Unit	Ground Support Unit
All incident support needs are provided by the Logistics Section. The section is responsible for providing: facilities, transportation, communications, supplies, equipment maintenance and fuelling, food services, medical services, and ordering resources. Six units may be established within the Logistics Section and the **Logistics Section Chief** will determine the need to activate or deactivate a unit. If a unit is not activated, responsibility for that unit's duties will remain with the **Logistics Section Chief**.	The **Communications Unit** is responsible for developing plans for the use of incident communications equipment and facilities; installing and testing of communications equipment; supervision of the Incident Communications Centre, if established; and the distribution and maintenance of communications equipment.	The **Medical Unit** is responsible for all medical services for incident assigned personnel. The unit will develop procedures for managing major medical emergencies; and provide medical aid. *Note: Medical assistance to the public or victims of the emergency is an operational function.*	Responsible for supplying the food needs for the entire incident, including all remote locations, (e.g., Camps, Staging Areas), as well as providing food for personnel unable to leave tactical field assignments. The **Food Unit** interacts with the **Facilities Unit** for location of fixed-feeding site; the **Supply Unit** for food ordering; and the **Ground Support Unit** for transporting food.	The **Supply Unit** is responsible for ordering, receiving, processing, and storing all incident-related resources.	The **Facilities Unit** is responsible for set-up, maintenance, and demobilization of all incident support facilities except staging areas. The **Facilities Unit** will also provide security services to the incident as needed.	The Ground Support Unit is primarily responsible for the maintenance, services, and fuelling of all mobile equipment and vehicles, with the exception of aviation resources. The unit also has responsibility for the ground transportation of personnel, supplies, and equipment.
- Identify and confirm communication links. - Assign personnel as required. - List and obtain all immediate resources requested by the **Incident Commander** or **Operations Section Chief**. - Identify anticipated and known incident service and support requirements. - Maintain continuous communications with the **Incident Commander.** - Develop plans to move required resources to site. - Confirm spending authorities with the Finance / Admin Section. - Mobilize resources. - Move required resources to site. - Coordinate spending with the **Finance / Admin Section Chief.**	- Establish the communications plan for the use of incident communications equipment and facilities. - Install, test, distribute, and maintain all communications equipment. - Advise on communications capabilities and limitations. - Establish telephone, communication links, and public address systems. - Establish clear and widespread communication throughout the incident.	- Arrange and provide response personnel with first aid and minor medical services. - Develop Incident Medical Plan. - Develop procedures for handling serious injuries of responder personnel. - Provide medical aid to personnel. - Assist the Finance / Administration Section with processing injury-related claims. *Note: Provision of medical assistance to the public or victims of the emergency is an operational function and would be done by the Operations Section and not by the Logistics Section Medical Unit. If there is a requirement for victims of an incident the local public ambulance service is most often utilized.*	- Responsible for supplying the food needs for the entire incident, including all remote locations (e.g., Camps, Staging Areas), as well as providing food for personnel unable to leave tactical field assignments. - Works with the Planning Section - **Resources Unit** to anticipate the numbers of personnel to be fed and develop plans for supplying food to all incident areas. - Interacts with the **Facilities Unit** for location of fixed-feeding site; the **Supply Unit** for food ordering; and the **Ground** and **Air Support Units** for transporting food. - Obtain necessary equipment and supplies and establish cooking facilities. - Order sufficient food and potable water from the **Supply Unit**. - Maintain inventory of food and water. - Maintain food services areas, ensuring that all appropriate health and safety measures and being followed. - Supervise caterers, cooks, and other **Food Unit** personnel as appropriate.	- Order, receive, distribute and track all incident equipment and supplies. - Ordered all off-incident resources including: tactical and support resources (including personnel), all expendable and non-expendable support supplies. - Management of tool operations, including the storage, disbursement, and service of all tools and portable non-expendable equipment.	- Set-up, maintain, and demobilize incident support facilities with the exception of staging areas. - Facilities may include: Incident Command Post, Incident Base, Camps, and other facilities within the incident area to be used for feeding, sleeping and sanitation services. - Prepare layout of facilities; inform appropriate unit leaders. - Will provide security services to the incident as needed. - Contact local law enforcement agencies as required. - Investigate and document all complaints and suspicious occurrences. - Ensure strict compliance with applicable safety regulations. - Provide facility maintenance services, e.g., sanitation, lighting, etc. - Demobilize base and camp facilities.	- Responsible for the maintenance, service and fuelling of all mobile equipment and vehicles, with the exception of aviation resources. - Coordinates the transportation of all personnel, supplies, and equipment. - Update the **Resources Unit** with the status (location and capability) of transportation vehicles. - Develop the Incident Traffic Plan as required.

Important

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Throughout the duration of the incident, each person in a role must:
- Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in **Section 6: Forms**.

After the incident is over, each person in a role must:
- Assist with post-incident activities.

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Revised October 2018

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General Staff Roles – Finance / Admin Section

Finance / Admin Section Chief	Time Unit	Procurement Unit	Compensation & Claims Unit	Cost Unit
The **Finance / Administration Section Chief** is responsible for managing all financial aspects of an incident. The **Finance / Administration Section Chief** will determine the need to activate or deactivate a unit.	The **Time Unit** is responsible for ensuring the accurate recording of daily personnel time, compliance with specific agency time recording policies and managing commissary operations if established at the incident.	All financial matters pertaining to vendor contracts, leases and fiscal agreements are managed by the **Procurement Unit**. The unit is also responsible for maintaining equipment time records. The **Procurement Unit** establishes local sources for equipment and supplies; manages all equipment rental agreements; and processes all rental and supply fiscal document billing invoices.	This unit oversees the completion of all forms required by workers' compensation and local agencies. A file of injuries and illnesses associated with the incident will also be maintained and all witness statement will be obtained in writing. Close coordination with the medical Unit is essential. The **Compensation & Claims Unit** is also responsible for investigating all claims involving property associated with or involved in the incident.	The **Cost Unit** provides all incident cost analysis. It ensures the proper identification of all equipment and personnel requiring payment; records all cost data; analyzes and prepares estimates of incident costs; and maintains accurate records of incident costs.
❑ Identify and confirm communication links. ❑ Assign personnel to assume the following positions, as required: **Time Unit, Procurement Unit, Compensation & Claims Unit,** and **Cost Unit.** ❑ Review legal issues with the **Incident Commander** and **EOC Director**. ❑ Maintain continuous communications with the **Incident Commander**. ❑ Brief agency administrative personnel on all incident-related financial issues needing attention or follow-up. ❑ Manage all financial aspects of an incident.	❑ Record daily personnel time, ensure compliance with specific agency time recording policies, and manage commissary operations if established at the incident. ❑ Submit cost estimate data forms to **Cost Unit** as required. ❑ Ensure that all records are current and complete prior to demobilization.	❑ Manage finances relating to vendor contracts, leases and fiscal agreements. ❑ Maintain equipment time records. ❑ Establish local sources for equipment and supplies. Coordinate with local jurisdiction on plans and supply sources. ❑ Manage all equipment rental agreements. Establish contracts and agreement with supply vendors. ❑ Processes all rental and supply fiscal document billing invoices. ❑ Prepare and authorize contracts and land use agreements, as needed.	❑ Handle all matters relating to compensation for injury or property damage due to the incident. ❑ Oversees the completion of all forms required by workers' compensation and local agencies. ❑ Maintain a file with all the injuries and illnesses associated with the incident. ❑ Obtain witness statements in writing. ❑ Investigate all claims involving property associated with or involved in the incident. ❑ Ensure the completion of a Resident Compensation Log for any out-of-pocket expenses incurred by evacuees. **Form B2** ❑ All claims must be submitted to the Finance and Legal departments for processing and disbursement of funds. ❑ If applicable, Finance and Legal will deal with insurers as well as any other extraneous circumstances (affected parties want more, etc.).	❑ Collect and evaluate cost data to establish an accurate picture of the incident costs. ❑ Create cost summaries, cost estimates, and cost saving recommendations. ❑ Prepare resources-use cost estimates for the Planning Section. ❑ Identify all equipment and personnel requiring payment.

Important

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❑ Assist with post-incident activities.

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Operations Section - Public Safety Roles

Public Safety Group Supervisor	Air Monitors	Reception Centre Rep	Roadblocks	Rovers	Telephoners
The **Public Safety Group Supervisor** is responsible for the management, planning, consideration, and implementation of external public protection activities for the duration of the incident.	**Air Monitoring** personnel are responsible for acquiring and providing air quality readings to the **Public Safety Group Supervisor**.	**Reception Centre Reps** are responsible for establishing reception centres, managing evacuee accommodation, communication and documentation for compensation	**Roadblock** personnel are responsible for restricting unauthorized entry into the hazard areas during an incident that could potentially jeopardize public safety.	**Rovers** travel to assigned locations to locate the public and personally provide public safety instructions and assistance as required. This may be completed via truck, ATV, boat, helicopter, etc.	**Telephoners** are responsible for the notification of impacted residences and businesses to provide public safety instructions.

Public Safety Group Supervisor

- Confirm communication links with the **Incident Commander** and **Operations Section Chief**.
- In conjunction with the **Incident Commander**: determine the size of the EPZ; identify the residents, businesses, industrial operators, and / or transients in the area; and determine the initial public protection measures to be taken. Consider the impact of major highways, navigable water courses, cleared pipeline rights of way & railways in the hazard area. Refer to **Section 4: Emergency Response Procedures** for guidelines on evacuation / shelter, ignition, roadblocks, rovers, public concerns, etc. Additional information for **Air Monitors, Reception Centre Representative, Roadblocks, Rovers,** and **Telephoners** can be found in **Section 2: Roles & Responsibilities**.
- In conjunction with the **Incident Commander, Planning Section Chief**, and **Operations Section Chief**, develop and implement an Incident Action Plan (IAP).
- Review resident lists, area user lists, reception centres, and telephone numbers within the ERP.
- If required, establish a Regional Emergency Operations Centre (REOC).
- Assign personnel to assume the following positions as required: **Air Monitors, Reception Centre Representative, Roadblocks, Rovers,** and **Telephoners.**
  - The **Telephoners** must have sufficient personnel to accommodate the following ratios when contacting residents: 1 Telephoner to every 7 residences; and 1 Supervisor for every 10 Telephoners.
- Dispatch **Air Monitors** at a Level 1 emergency (hand-held and mobile).
  - Dispatch trained personnel with the appropriate hand-held gas monitors to record concentrations of LEL and H_2S at the nearest un-evacuated residences downwind of the incident site.
  - Mobilize third party mobile air monitoring units which can measure in parts per billion (ppb)
  - Maintain communication with the applicable government regulator and environment agency regarding air monitoring needs and activities.
  - Consult with the **Operations Section Chief** to determine the need for evacuation / sheltering. This is based on air monitoring readings at the nearest downwind residence.
- Prioritize public closest to, downwind, those that have requested early notification, and those with special needs to establish the order of evacuation. Coordinate evacuation or shelter of residents, area users, and transients (via **Telephoners** and **Rovers**).   *Form B6 Form B7 Form B8*
  - Determine who needs to be notified and what script will be used: Early Notification / Voluntary Evacuation Message, Shelter-in-Place Phone Message, Evacuation Phone Message.
  - At a Level 1 Emergency it is required to notify any special needs residents and give them the option to evacuate.
  - If residences are evacuated, a reception centre must be established.
  - Determine and notify landowner / occupant(s) as soon as possible.
  - Ensure the schools / school buses are contacted to make arrangements for school age children (if applicable).
  - If a large number of people need to be evacuated (large industrial operations and/or public facilities) refer to the **Area Specific Information** section (white tabs) for contacts to obtain charter buses or changes to the normal notification procedures.
  - Send **Rovers** (if required) to identify human activity in the area which is not already identified within the ERP (drilling, pipeline construction, logging, hunting, farming, camping, fishing, etc.).
  - Prepare Evacuation Notices and provide copies to **Rovers**.   *Form B5*
  - **Rovers** can be used to assist with notifications, assist with evacuating special needs residents, assist with air monitoring, etc.
  - Continually assess the need for additional evacuation, shelter or ignition based on air monitoring readings.
- Determine the need for helicopters to identify human activity in the area.
- Determine the need for and location of **Roadblocks** to isolate and secure the area.
  - Dispatch trained personnel with the appropriate equipment to establish roadblocks on the roads entering/exiting the hazard area.
  - Contact the RCMP & Ministry of Transportation for permission to close 1, 2, or 3 digit provincial or secondary highways.
- Assess and expand the incident response to include those outside of the EPZ if required by air monitoring readings. Coordinate public protection measures outside the EPZ with the local authority.
- Ensure security of evacuated homes, at roadblocks, and at the reception centre.
- Regularly update the **Incident Commander**.
- Confirm communication links with: **Air Monitors, Reception Centre, Roadblocks, Rovers,** and **Telephoners**. Personnel should check in at scheduled intervals.
- Review and confirm evacuation of residents, area industrial users, transients, etc. from the area.
- Request that a Notice to Airmen (NOTAM) is issued to restrict the airspace above the EPZ.

Air Monitors

- Provide air monitoring readings to assist with decision making (evacuation / shelter / ignition).
- Obtain and check equipment and information (maps, forms, communications, reports, monitors, safety, and breathing equipment).
- Confirm communication links.
- Monitor closest downwind public location or residence.
- Monitor environment for adverse effects.
  - Record all readings on the Air Monitoring Log.   *Form A5*
- Report all readings at established intervals to the **Public Safety Group Supervisor**.
- For your own safety, ensure **Public Safety Group Supervisor** is notified immediately if readings are approaching 10% LEL and / or 10 ppm H_2S.
  - Prepare Mobile Monitoring Plan.

Reception Centre Rep

- Confirm reception centre is available for use.
- Establish reception centre. Refer to **Section 2: Roles & Responsibilities.**
- Confirm communication links.
- Receive evacuees and maintain a Reception Centre Registration Log.   *Form B1*
- Arrange for food and accommodations for the evacuees.
  - Provide evacuees with a place to request counselling services, if required.
- Record and follow up on all evacuees who choose to make their own accommodation arrangements.
- Arrange for temporary care of livestock (if possible) and the security of evacuated property.
- Establish and oversee compensation administration activities at the reception centre.
  - Reimburse evacuees for their immediate out-of-pocket expenses and log details on a Resident Compensation Log.   *Form B2*
- Where possible, provide evacuees with information regarding their property, livestock, and the incident.
- Forward all media and incident inquiries to the **Information Officer**.
- Report all names of evacuees who have registered at the reception centre to the **Public Safety Group Supervisor**.
- Address resident concerns and forward them to the **Public Safety Group Supervisor.**

Important

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Throughout the duration of the incident, each person in a role must:
- Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in **Section 6: Forms**.

After the incident is over, each person in a role must:
- Assist with post-incident activities.

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Roadblocks

- In conjunction with the **Public Safety Group Supervisor** determine the need for and location of roadblocks.
- Pickup and check roadblock kits.
- Proceed to roadblock locations.
- Determine driving directions to assigned roadblock location that does not have you pass through the hazard area.
- Confirm communication links.
- Establish roadblocks to secure the EPZ.   *Form B3*
- Follow the scripts and procedures in the ERP. Refer to either **Section 2: Roles & Responsibilities** or **Section 6: Forms**.
  - If media personnel show up at your roadblock, forward all requests to your direct supervisor who'll direct them to the **Information Officer**.
- Monitor area for H_2S and / or LEL with personal monitors and document readings on the Air Monitoring Log.   *Form A5*
- Report all H_2S and / or LEL reading changes / increases to the **Public Safety Group Supervisor**.
- For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching 10% LEL and / or 10 ppm H_2S.
  - Record all incoming and outgoing traffic, personnel, and equipment on the Roadblock Log.   *Form B4*
- Forward information given to you by people passing through your location to the **Public Safety Group Supervisor**.
- Report any person that insists on going through the roadblock into the hazard area as well as any suspicious activity to the **Public Safety Group Supervisor**.
- Maintain communication with the **Public Safety Group Supervisor**.
- Maintain roadblock locations. Do not leave until requested to do so by the **Public Safety Group Supervisor** or until relieved by other **Roadblock** personnel.

*Note: See Section 2: Roles & Responsibilities for a media script for **Roadblock** and **Rover** personnel.*

Rovers

- Confirm resident contact lists are available.
- Confirm communication links.
- Know safe routes in and out of the EPZ.
- Search for residents and transients in the Emergency Response and Planning Zones.
- Check all buildings including barns, shops, sheds, etc.
- Assist, as required, with the notification, evacuation or sheltering of persons within the EPZ. Record all contact with residents using the Resident Contact Log.   *Form B3*
- Post Evacuation Notices for residents that are not at their residence.   *Form B5*
- Follow the scripts and procedures in the ERP. Refer to **Section 2: Roles & Responsibilities** or **Section 6: Forms.**
- Monitor area for H_2S and / or LEL with personal monitors and document readings on the Air Monitoring Log.   *Form A5*
- Report all H_2S and / or LEL reading changes / increases to the **Public Safety Group Supervisor**.
- For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching 10% LEL or 10 ppm H_2S.
- Report any suspicious behaviour to the **Public Safety Group Supervisor** who will notify the police as required.
- Maintain communication with the **Public Safety Group Supervisor**.

*Note: See Section 2: Roles & Responsibilities for a media script for **Roadblock** and **Rover** personnel.*

Telephoners

- Confirm resident contact lists are available.
- Confirm communication links.
- In conjunction with the **Public Safety Group Supervisor**, determine who needs to be notified (residents, businesses, area users, etc.).
- Review with the **Public Safety Group Supervisor** which telephoner scripts to use: Early Notification / Voluntary Evacuation Message, Shelter-in-Place Phone Message, Evacuation Phone Message.   *Form B6 Form B7 Form B8*
- Contact special needs residents at a Level 1 Emergency and provide them with the option to evacuate.
- Contact the other residents and area users in the EPZ and advise them to evacuate or shelter.
- Contact the schools / school buses to make arrangements for school age children (if applicable).
  - Advise that buses in the affected area leave immediately and that buses should not enter the area.
  - Request a school administrator for the reception centre to assist in managing the children and releasing them to their guardians.
- Document all resident interactions using the Resident Contact Log and report this information to the **Public Safety Group Supervisor**. Immediately advise the **Public Safety Group Supervisor** about unsuccessful contacts and any residents requiring assistance.   *Form B3*

Located at the Incident Command Post (ICP) or the Regional Emergency Operations Centre (REOC).	Location will be assigned.	Location will be the reception centre.	Location will be assigned.	Location will be assigned.	Location will be Incident Command Post (ICP) or Regional Emergency Operations Centre (REOC).

Revised November 2021

Escalate, Downgrade or Stand-Down Levels of Emergency: As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. **Emergency Follow-up**: Once the emergency is over, the area residents, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

Overview

H_2S, SO_2, LEL or other toxic substance concentrations will be monitored continuously during the incident response. It is crucial that **Air Monitors** continuously update the **Public Safety Group Supervisor** with monitored results. If air monitoring readings show high levels of H_2S, SO_2, or LEL the **Public Safety Group Supervisor** may need to initiate evacuation / shelter of additional residences, change the location of the roadblocks, or ignite the release.

Air Monitor Roles

❑ Obtain and check equipment and information (maps, forms, communications, reports, monitors, safety, and breathing equipment).
❑ Confirm communication links.
❑ Monitor closest downwind public location or residence.
❑ Monitor environment for adverse effects.
❑ Record all readings on the Air Monitoring Log provided. [Form A5]
❑ Report all readings at established intervals to the **Public Safety Group Supervisor**.
❑ For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching the following levels: 10% LEL or 10 ppm H_2S.
❑ Prepare Mobile Monitoring Plan.
❑ Document activities using the ICS 214 Activity Log. [Form ICS 214]
❑ Assist with post-incident activities.
❑ Monitor H_2S and LEL concentrations along the edge of the EPZ to determine if sheltering and/or evacuation criteria has been met beyond the EPZ.

Air Monitoring Equipment

Air monitoring equipment is used to:
• Track the plume.
• Determine if ignition criteria are met.
• Determine whether evacuation and / or shelter-in-place criteria have been met.
• Determine roadblock locations.
• Determine concentrations in areas being evacuated to ensure that evacuation is safe.
• Assist in determining when the emergency can be downgraded.

Tips

❑ Air monitors should be dispatched at a Level 1 Emergency.
❑ Ensure all equipment is operational and the appropriate documentation is available to verify testing and calibration requirements.
❑ Use the buddy system where possible.
❑ Breathing apparatus – be prepared to don apparatus quickly.
❑ Ensure all personnel have a personal gas monitor.
❑ Speed and direction of wind may vary, therefore, be prepared to track gas plume.
❑ Record all information:
  • Concentrations in ppm or ppb
  • Location and time of readings
  • Wind speed and direction

Regulatory Requirements

Drilling & Completions

Critical / Special Sour Wells
If the EPZ includes a portion of urban density development or urban centre:
• There must be minimum of two mobile air monitors:
  • One to monitor the boundary of the urban density development or urban centre and the other to track the plume.
• Ensure that one unit is in the area during drilling and / or completion, testing, and workover operations in potentially critical sour zones.
• Dispatch a mobile air quality monitoring unit(s) at a level 1 emergency and request additional units as required.
• Dispatch a mobile air quality monitoring unit(s) when it is evident that well control measures are deteriorating and that a sour gas release is likely to occur.
• Prior to conducting operations in the sour zone, determine where the monitoring equipment is located and what the estimated travel time is to the well site.

If the EPZ **DOES NOT** include a portion of urban density development or urban centre:
• Dispatch a mobile air quality monitoring unit(s) at a level 1 emergency and request additional units as required.
• Dispatch a mobile air quality monitoring unit(s) when it is evident that well control measures are deteriorating and that a sour gas release is likely to occur.
• Prior to conducting operations in the sour zone, determine where the monitoring equipment is located and what the estimated travel time is to the well site.

Continuous Detection Devices
A continuous H_2S/LEL system must be used while in the critical sour zone. The detection system requirements are as follows:
• A minimum of four sensors able to detect H_2S concentrations of 5 ppm or greater.
• Audible and visual alarms near the driller's station.
• Set alarms at 10 ppm.
• Locate sensors at the shale shaker, near the bell nipple, on the rig floor, and at the mud mixing unit.

Portable Detection Devices
• One portable H_2S detection device is required while drilling in the critical sour zone.

Production Operations & General Information

Sour Gas Release
• If notified of a release by alarm or by a reported odour, the licensee must investigate the source of the release and dispatch air monitors upon confirmation of the release location or when it is evident that spill control measures are not effective.
• Air quality monitoring occurs downwind with priority being directed to the nearest un-evacuated residence or area where people may be present.
• Air monitors (personal handheld, stationary, and mobile) should be dispatched at a level 1 emergency.
• Dispatch a mobile air quality monitoring unit(s) when it is evident that spill control measures are not effective and that a sour gas release is likely to occur.
• Licensee personnel will monitor and record the concentrations until a mobile air monitoring unit arrives or until the incident is over. At minimum, these readings must include LEL and H_2S.
• If a sour gas release has been ignited, the licensee should continue to monitor response zones for H_2S from incomplete combustion, as well as SO_2.
• The licensee is expected to provide monitored H_2S and SO_2 information on a regular basis throughout a sour gas emergency to the relevant government regulator, environmental agency, health authority, local authorities, and on request to the public.

HVP Product Release
• Air quality monitoring may occur downwind or upwind depending on how the plume is tracking, with priority being directed to the nearest un-evacuated residence or areas where people may be present.
• The licensee is expected to provide monitored HVP product LEL information on a regular basis throughout the emergency to the relevant government regulator, environmental agency, health authority, local authorities, and on request to the public.

Downgrading Level of Emergency
• The decision to downgrade an incident will be based on the air monitoring results.

Air Monitoring Log - Example [Form A5]

Time	Location of Samples	H_2S (ppm)	LEL (%)	O_2 (%)	SO_2 (ppm)	Other	Temp (°C)	Wind Conditions *		Comments
								From	Speed (km/hr)	
19:06	12-05-13-16 W5M	5	4		10		19	NW	12	*Picked up 5 ppm reading upon entering lease access. Contacted control room at plant.*
19:15	12-05-13-16 W5M	6	7		12		18	NW	11	*H_2S reading increased 1 ppm at the access point.*
19:25	12-05-13-16 W5M	6	7		12		17	NW	11	*No change in readings. Wind and temperature is down.*

* Estimate meteorological conditions where accurate readings are not available.

1. Choosing a Position

1. Using your map and the current wind conditions, travel downwind, with priority being directed to the nearest un-evacuated residence or area where people may be present.
2. Confirm the location with the **Public Safety Group Supervisor** and make sure you have a safe route to the assigned location that does not cross the hazardous area.

2. Record Information

Record information on the following forms located within this Section:
❑ Air Monitoring Log [Form A5]
❑ ICS 214 Activity Log [Form ICS 214]

Reporting and Contacts

Air Monitors report to the **Public Safety Group Supervisor**.

Name:

Phone Number:

Reception Centre

Location:

Phone Number:

Wind Direction:

Air Monitors

A5 Air Monitoring Log

Date: _____

Page _____ of _____

Responder Name: _____

Responder Position: _____

Time	Location of Samples	H₂S (ppm)	LEL (%)	O₂ (%)	SO₂ (ppm)	Other	Temp (°C)	Wind Conditions * From	Wind Conditions * Speed (km/hr)	Comments

ICS 214 Activity Log

Incident Name:

Date / Time Initiated:

Prepared by: Position / Title:

Personnel Assigned

Name	ICS Position	Location

Activity Log

Time	Actions

Overview

In the event of an emergency in which residents need to be evacuated, a Reception Centre must be established to receive and register the evacuees. A **Reception Centre Representative** is assigned to manage / coordinate activities at the Reception Centre. The **Reception Centre Representative** continuously updates the **Public Safety Group Supervisor** with a list of those who have, and have not, checked in at the Reception Centre.

Reception Centre Rep Roles

- ❑ Confirm Reception Centre is available for use.
- ❑ Establish Reception Centre.
- ❑ Confirm communication links.
- ❑ Receive evacuees and maintain a Reception Centre Registration Log. **[Form B1]**
- ❑ Arrange for food and accommodations for the evacuees.
- ❑ Provide evacuees with a place to request counselling services, if required.
- ❑ Record and follow up on all evacuees who choose to make their own accommodation arrangements. **[Form B2]**
- ❑ Arrange for temporary care of livestock (if possible) and the security of evacuated property.
- ❑ Establish and oversee compensation administration activities at the reception centre.
- ❑ Reimburse evacuees for their immediate out-of-pocket expenses and log details on a Resident Compensation Log.
- ❑ Where possible, provide evacuees with information regarding their property, livestock, and the incident.
- ❑ Forward all media and incident inquiries to the **Information Officer**. **[Form C2]**
- ❑ Report all names of evacuees who have registered at the Reception Centre to the **Public Safety Group Supervisor**.
- ❑ Document activities using the ICS 214 Activity Log. **[Form ICS 214]**
- ❑ Assist with post-incident activities.
- ❑ Confirm information to be released to public with the **Information Officer.**
- ❑ Address resident concerns and forward them to the **Public Safety Group Supervisor**.
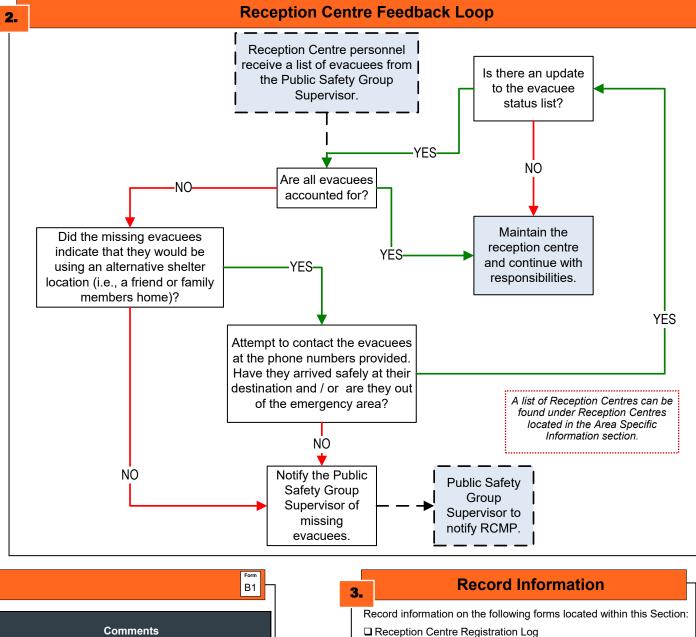
1. Choosing a Reception Centre

- ❑ Reception Centres are usually located in schools, hotels / motels, or community halls.
- ❑ It may be useful to coordinate the location of the Reception Centre with the local authority (city, town, county, M.D., etc.).
- ❑ See Area Specific Information (white tabs) for pre-identified Reception Centres in your area.

A Reception Centre should:

- ❑ Have a conference room of some type where a large number of people can gather.
- ❑ Have conferencing services including fax machine, internet access, and phone access.
- ❑ Be large enough to house all of the evacuees.
- ❑ Be outside of the hazard area.
- ❑ Allow residents to evacuate to the Reception Centre without travelling through the hazard area.
- ❑ Allow pets.

Tips

- ❑ Ensure you have enough staff to handle the needs of all of the evacuees.
- ❑ Allow evacuees to vent their emotions.
- ❑ Do not make any promises that cannot be kept.
- ❑ Attempt to reunite families as quickly as possible.
- ❑ Document the details of anyone who may have trouble coping with the incident so that they can be given proper psychological support.
- ❑ Monitor whether residents that have been contacted by the **Telephoners**, **Rovers**, and **Roadblock** personnel have checked in at the Reception Centre.

2. Reception Centre Feedback Loop

A list of Reception Centres can be found under Reception Centres located in the Area Specific Information section.

3. Record Information

Record information on the following forms located within this Section:

- ❑ Reception Centre Registration Log
- ❑ Resident Compensation Log
- ❑ ICS 214 Activity Log
- ❑ Media Contact Log

[Form ICS 214] [Form B1] [Form B2] [Form C2]

Reception Centre Registration Log - Example **[Form B1]**

Resident ID	Name (List all names in party) First	Last	# of Occupants	Number Arrived	Arrival Time	Depart Time	Destination Phone # (Where they can be reached)	Comments
G124-A	John	Doe	2	2	19:06	19:21	555-555-5555	John and his wife arrived safely then left to stay at a friend's house in Red Deer.
H131-B	Jane	Doe	3	3	19:12	19:28	555-555-5555	Jane and her 2 children arrived safely then left to stay with her mother in Bentley.
F122-A	James	Doe	5	3	19:20		555-555-5555	James, his wife and 1 child arrived safely. The other two children are away on a school trip. They will stay at the reception centre for the night.

Media Statement

Refer all media inquiries to the Media Representative in Calgary. However, if they insist on a statement, please use the following:

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

Note: See Section 3.0 Communication & Media for more information on media.

Reporting and Contacts

Reception Centre Reps report to the **Public Safety Group Supervisor**.

Name: _____

Phone Number: _____

Reception Centre

Location: _____

Phone Number: _____

Wind Direction: _____

Reception Centre Rep

Revised February 2019

B1 Reception Centre Registration Log

Date: _____ Responder Name: _____

Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

Resident id	Name (list all names in party)		# Of Occupants	Number arrived	Arrival time	Depart time	Destination phone # (where they can be reached)	Comments
	First	Last						

B2 Resident Compensation Log

Resident's Name:	Home Address:	Home Telephone #:	Location of Land (LSD):
		Business Telephone #:	
Number of Residents Evacuated:	Evacuated to:	Telephone # While Evacuated:	

No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	Details of Expense
Total Reported Expenses									

Approved By: _____ Date: _____

ICS 214 Activity Log

Incident Name:
Date / Time Initiated:

Prepared by:	Position / Title:

Personnel Assigned		
Name	**ICS Position**	**Location**

Activity Log	
Time	**Actions**

Overview

In the event of an emergency, roadblock locations and road detours will be established. The company will initially establish and maintain roadblocks until relieved by highway maintenance contractors or the RCMP. **Roadblock** personnel will be assigned in teams of two, one member to stop approaching traffic, the other will record the information gathered and relay to The Public Safety Group Supervisor. The **Public Safety Group Supervisor** must be continuously updated by **Roadblock** personnel so that all vehicles entering and exiting the EPZ are accounted for.

Roadblock Personnel Roles

- In conjunction with the **Public Safety Group Supervisor,** determine the need for and location of roadblocks.
- Pickup and check roadblock kits.
- Proceed to roadblock locations.
- Determine driving directions to assigned roadblock location that does not have you pass through the hazard area.
- Confirm communication links and establish communication interval times.
- Establish roadblocks to secure the EPZ.
- Follow the scripts and procedures in the ERP.
- If media personnel show up at your roadblock, forward all requests to your direct supervisor who'll direct them to the **Information officer**.
- Knowledge and ability to communicate safest route away from hazard.
- Monitor area for H_2S and / or LEL with personal monitors and document readings on the Air Monitoring Log. **[Form A5]**
- Report all reading changes / increases to the **Public Safety Group Supervisor.**
- For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching 10% LEL and / or 10 ppm H_2S. **[Form B4]**
- Move location of Roadblock immediately if readings are approaching 10% LEL and / or 10 ppm H_2S.
- Record all incoming and outgoing traffic, personnel, and equipment on the Roadblock Log. **[Form ICS 214]**
- Forward information given to you by people passing through your location to the **Public Safety Group Supervisor**.
- Document activities using the ICS 214 Activity Log.
- Report any person that insists on going through the roadblock into the hazard area as well as any suspicious activity to the **Public Safety Group Supervisor**.
- Maintain communication with the **Public Safety Group Supervisor**.
- Maintain roadblock locations. Do not leave until requested to do so by the **Public Safety Group Supervisor** or until relieved by other **Roadblock** personnel.
- Assist with post-incident activities.

Roadblock Kit Contents - Sample

The roadblock kit may contain the following items:
Recommended
- Direct communication capability (radio, cell phone, etc.)
- ERP maps and roadblock forms
- Flashlight and batteries
- High visibility / reflective vests
- Orange traffic cones / reflectors
- Pens and / or pencils
- Personal Air Monitoring Device (H_2S, CO, O_2, LEL)
- Portable rotating emergency light
- SCBA
- Hand-held stop sign with reflective tape
- Waterproof bag
Optional
- Caution tape
- Rain suit
- Road barrier

Tips

- When talking to motorists at the roadblock, ONLY provide them with the information as directed by the **Public Safety Group Supervisor**.
- Ask for identification prior to granting access.
- You do not have the legal authority to restrict access to the area without an order from the relevant authority. Report any person who chooses to proceed, without permission, through the roadblock.
- Check with the motorists and ensure all members of their residence are accounted for and documented on the Resident Contact Log. Report any resident that is left behind in the EPZ. **[Form B3]**
- The roadblock should be setup to allow optimal visibility and sufficient distance for traffic to come to a safe and complete stop.
- **Roadblock** personnel should be highly visible on the side of the road and have an escape route in case of an emergency.
- DO NOT leave your position until you are directed to do so.

---

1. Choosing a Roadblock

Roadblocks should be established:
- Approximately where the EPZ intersects any highways / roads.
- Outside of the hazard area.
- At a conspicuous location where the **Roadblock** personnel will be visible to approaching traffic, providing them with enough time to safely stop.
- At a location where traffic can easily turn around or detour (consider the potential for larger vehicles such as buses, semi-trailers, drilling rigs, etc.).
- Where possible at natural roadblock locations (e.g., gates, bridges, junctions, etc).

2. Before Departure

- Make sure your vehicle is equipped and suitable for the travel conditions.
- Check roadblock kit to confirm all items are present (see sample of roadblock kit contents to left).
- Confirm that your handheld monitor for H_2S and / or LEL is functioning properly.
- Check all communications devices.
- Check that the red signaling baton flashlight is working and has spare batteries.
- Confirm that you have enough copies of the Roadblock Log form.
- Confirm the location of the roadblock with the **Public Safety Group Supervisor** and make sure you have a safe route to the assigned location that does not cross the hazardous area.

3. Setting up a Roadblock

- Park vehicle as illustrated, activating four way flashers and roof mounted rotating beacon.
- Put on reflective vests.
- Take a reading with your handheld monitor for H_2S and / or LEL; ensuring your roadblock is not too close to the edge of the EPZ. Record readings on the Air Monitoring Log. **[Form A5]**
- Notify the **Public Safety Group Supervisor** once your roadblock is set up.
- Continue to monitor and record H_2S and / or LEL levels at scheduled intervals. Report to the **Public Safety Group Supervisor** at scheduled intervals.
- Maintain roadblock until the emergency is over and the "all clear" message is given or until relieved by other **Roadblock** personnel.

HAZARD AREA

LEAVING EPZ

ENTERING EPZ

Shoulder

STOP

WARNING MARKERS – these markers will be indicators that there is a roadblock ahead

To give motorists time to prepare to come to a stop, it is recommended that the **Roadblock** personnel set up all available collapsible reflective triangles 100 metres apart, at a minimum distance of 200 metres before the roadblock.

Reporting and Contacts

Roadblock personnel report to the **Public Safety Group Supervisor**.

Name:_____

Phone Number:_____

Reception Centre

Location:_____

Phone Number:_____

Wind Direction:_____

Roadblock personnel cannot force an evacuation or restrict access to the area unless proper authority has been granted. The authority for forced evacuation is gained only through the declaration of a State of Local Emergency by the local authority.

When establishing a roadblock consider:
- Visibility
- Distance
- Bends in the road
- Level of the ground

Remember to:
- Remain calm
- Be courteous
- Record names
- Notify the **Public Safety Group Supervisor**

---

4. How to Stop Traffic

1. Hold the reflective stop / slow paddle erect and away from your body. Never wave the sign.
2. Look directly at the approaching driver.
3. Raise your free arm with the palm of your hand exposed to the driver.
4. Bring the vehicle to a full stop.
5. After the first vehicle has stopped, move to a spot (near the centre line of the roadway) where you can be seen by other approaching vehicles.

Because visibility is reduced at night, it is important that you use utmost care when stopping traffic through a roadblock area, and that you protect yourself from injury by:

- Standing in a safe position on the shoulder of the road.
- Waving the red signaling baton flashlight back and forth.

Note: The red signaling baton flashlight should only be used in place of the reflective stop / slow paddle at night or in conditions of low / poor visibility.

5a. Roadblock Script

"I am representing [Insert Company Name] and we are presently experiencing control problems ahead. This situation is serious enough to warrant restricted access beyond this point. For your own safety I must ask you not to proceed."

Note:
- *Record driver's name, vehicle make, colour, etc. and at least the license plate number of all vehicles approaching your roadblock; also make a note of the time and of the direction the vehicle took when leaving (e.g., east, south, west, north) on your log sheet.*
- *Remember you have no legal position to restrict access to the general public. You are there to protect and notify – to protect the health and safety of the people by notifying them of the danger and secondly to protect the property of the residents who have evacuated the area.*
- *Should someone continue into the restricted area, regardless of your warning about personal safety, then use the 2-way radio or cell phone to notify the **Public Safety Group Supervisor** and the matter shall be immediately turned over to the Police.*

5b. Media Statement

If the media arrives at your roadblock location, company personnel may give the following statement:

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

Contact the **Public Safety Group Supervisor** if a media representative arrives at your roadblock.

NEVER offer your opinion of what is happening at the location to a media person or stranger. This can be interpreted as the company's position. **DO NOT** give statements, other than the above message, regarding the emergency situation to the MEDIA. Refer them to the Information Officer.

Be courteous but firm.
If the questioning persists, just keep politely repeating word for word the statement above.

6. Record Information

Record information on the following forms located within this section:

- Roadblock Log
- Resident Contact Log
- Air Monitoring Log
- ICS 214 Activity Log

[Form ICS 214] [Form A5] [Form B3] [Form B4]

Possible Scenarios for Roadblock Personnel:

- Motorist obeys request and drives away from the EPZ.
- Motorist is leaving the EPZ and agrees not to return until further notice.
- Emergency responders (service companies, fire, ambulance, etc.) are entering the EPZ to help respond to the incident.
- Motorist disobeys request to leave the area and enters the EPZ.

In all cases, notify the **Public Safety Group Supervisor** and log all information.

Roadblocks

B3 Resident Contact Log

Date: _____ Responder Name:_____

Page ____ of ____ Responder Position: _____ Responders Phone No.: _____

Time	Resident name	Resident ID	Shelter / Evacuate	Number of people		Assistance or transportation required?	Comments
				Inside	Outside		
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	

B4 Roadblock Log

Date: _____ Responder Name:_____

Page ____ of ____ Responder Position: _____ Responders Phone No.: _____

Vehicle type	License plate # and province / state	Name of driver (if available)	# of people in vehicle	Time entering zone	Time Exiting zone	Comments (record all vehicles turned away)

ICS 214 Activity Log

Incident Name:

Date / Time Initiated:

Prepared by: Position / Title:

Personnel Assigned

Name	ICS Position	Location

Activity Log

Time	Actions

Overview

Rovers are responsible for patrolling the Emergency Planning Zone to locate and notify residents, businesses, industrial operators, transients (i.e. hunters, trappers, recreational users, non-resident landowners), and the general public. This may be completed via truck, ATV, boat, helicopter, etc. The **Public Safety Group Supervisor** must be continuously updated by the **Rovers** so that unsuccessful attempts to evacuate residents, transients, etc. can be followed up on immediately.

Rover Personnel Roles

❑ Confirm resident contact lists are available.
❑ Confirm communication links.
❑ Know safe routes in and out of the EPZ.
❑ Search for residents and transients in the Emergency Planning and Response Zones.
❑ Check all buildings including barns, shops, sheds, etc.
❑ Assist, as required, with the notification, evacuation or sheltering of persons within the Emergency Planning Zone. Record all contact with residents using the Resident Contact Log. [Form B3]
❑ Post Evacuation Notices for residents that are not at their residence. [Form B5]
❑ Follow the scripts and procedures in the ERP.
❑ Monitor area for H_2S and / or LEL with personal monitors and document readings on the Air Monitoring Log. [Form A5]
❑ Report all reading changes / increases to the **Public Safety Group Supervisor.**
❑ For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching the following levels: 10% LEL and / or 10 ppm H_2S.
❑ Report any suspicious behaviour to the **Public Safety Group Supervisor** who will notify the police as required.
❑ Document all activities using the ICS 214 Activity Log. [Form ICS 214]
❑ Maintain communication with the **Public Safety Group Supervisor**.
❑ Assist with post-incident activities.

Media Statement

If a media representative approaches you, company personnel may give the following statement:

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

Contact the **Public Safety Group Supervisor** if a media representative approaches you.

NEVER offer your opinion of what is happening at the location to a media person or stranger. This can be interpreted as the company's position. **DO NOT** give statements, other than the above message, regarding the emergency situation to the MEDIA. Refer them to the Information Officer.

Be courteous but firm.
If the questioning persists, just keep politely repeating word for word the statement above.

Reporting and Contacts

Rovers report to the **Public Safety Group Supervisor**.

Name: _____

Phone Number: _____

Reception Centre:

Location: _____

Phone Number: _____

Wind Direction: _____

Evacuation Notice - Example

[Form B5]

DATE: _____
TIME: _____

EVACUATION NOTICE

[Insert Company Name] **has an emergency at its nearby location.**

As a safety precaution, please leave the area in a (north / east / south / west) direction and proceed to the Reception Centre located at

_____.

[Insert Company Name] representatives will be available at the Reception Centre to address your questions or concerns.

For assistance, call *[Insert Company Name]* at

_____.

Thank you

Tips

Remember to:
❑ Remain calm
❑ Be courteous
❑ Document all actions and comments
❑ Notify the **Public Safety Group Supervisor**

Remember to use a handheld H_2S and / or LEL monitor to continually test the atmosphere.
Report all H_2S and / or LEL reading changes / increases to the **Public Safety Group Supervisor**.

Response personnel cannot force an evacuation or restrict access to the area unless proper authority has been granted. The authority for forced evacuation is gained only through the declaration of a State of Local Emergency by the local authority.

---

1. Before Departure

❑ Protect yourself
❑ Ensure you are equipped with all necessary equipment:
    ❑ SCBA
    ❑ Gas monitors
    ❑ Mobile communications or other form of communication
    ❑ Forms
    ❑ Vehicle (4x4) with full tank of fuel
    ❑ Map
❑ Confirm that your handheld monitor for H_2S and / or LEL is functioning properly.
❑ Confirm that you have enough copies of the Evacuation Notice.
❑ Confirm your assignments with the **Public Safety Group Supervisor** and make sure you have a safe route to the assigned location that does not cross the hazardous area.

2. Notifying Residents / Transients

The **Public Safety Group Supervisor** may request you to patrol the Emergency Planning and Response Zones in search of transients (people passing through the area) and / or residents that couldn't be reached by phone. Make contact with residents / transients and after providing an explanation record their names, contact information, purpose for being in the area (travelling through, live in the area, etc.), current condition, timing of your arrival, and whether or not they require evacuation assistance.

"Hi, I am *[Insert Name]* **representing** *[Insert Company Name]***. The company is presently experiencing control problems at a nearby location. The situation is serious enough that we are evacuating the public in the area. For your own safety I must ask you to leave the area immediately and check in with a company representative at the Reception Centre. Representatives at the Reception Centre will address any questions you may have and will make arrangements for your temporary accommodations."**

❑ Ask if they will require evacuation assistance and arrange additional transportation assistance if necessary.
❑ Make sure they are all accounted for.
❑ Ensure they gather any supplies they will need for the next 24 hours (medicines, baby food, diapers, etc.).
❑ If they are able to transport themselves to the Reception Centre provide them with directions that will keep them away from the hazard.
❑ Ask them if they have any questions.
❑ Provide them with your name and contact information in case they need assistance later.
❑ Report to the **Public Safety Group Supervisor**.

3. Requested Evacuation Assistance

The **Public Safety Group Supervisor** may request you to provide evacuation assistance for residents that have requested it. Ensure you obtain the number of residents requiring assistance, resident's names, location (legal and address), and the reason evacuation assistance is required (medical issue, children home alone, etc). A **Telephoner** should have already contacted and explained the situation to the residents; however, it is a good idea to confirm with the **Public Safety Group Supervisor** that they know you are coming to assist them. If they have not already been informed, contact the resident to tell them you are on your way and provide an estimated time of arrival.

"Hi, I am *[Insert Name]* **representing** *[Insert Company Name]***. I am here to help you evacuate out of the hazard area and make sure you arrive safely at the Reception Centre. A company representative at the Reception Centre will address any questions you may have and will make arrangements for your temporary accommodations."**

❑ Try not to scare them. They are aware you might be coming but don't know what to expect.
❑ Make sure they are all accounted for.
❑ Ensure they gather any supplies they will need for the next 24 hours (medicines, baby food, diapers, etc.)
❑ Ask them if they have any questions.
❑ Once you are satisfied that all personnel from the residence are accounted for, deliver them to the Reception Centre.
❑ On the way to the Reception Centre, notify the **Public Safety Group Supervisor** of your progress and estimated time of arrival at the Reception Centre.
❑ Ensure that the residents check in at the Reception Centre with the **Reception Centre Representative** before you leave for your next assignment.

4. Record Information

Record information on the following forms located within this section:
❑ Resident Contact Log
❑ Air Monitoring Log
❑ ICS 214 Activity Log
❑ Evacuation Notice

[Form ICS 214] [Form A5] [Form B3] [Form B5]

Rovers

B3 Resident Contact Log

Date: _____

Page _____ of _____

Responder Name: _____

Responder Position: _____

Responders Phone No.: _____

Time	Resident name	Resident ID	Shelter / Evacuate	Number of people Inside	Number of people Outside	Assistance or transportation required?	Comments
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	

ICS 214 Activity Log

Incident Name:

Date / Time Initiated:

Prepared by: | Position / Title:

Personnel Assigned

Name	ICS Position	Location

Activity Log

Time	Actions

Overview

In the event of an emergency in which residents and area users need to be sheltered and / or evacuated, a team of **Telephoners** will be established to contact people in the area and provide instructions to ensure their safety. The **Public Safety Group Supervisor** must be continuously updated with the **Telephoners** progress so that unsuccessful contact attempts and requests for evacuation assistance can be followed up on immediately.

Telephone Personnel Roles

- ❑ Confirm resident contact lists are available.
- ❑ Confirm communication links.
- ❑ In conjunction with the **Public Safety Group Supervisor**, determine who needs to be notified (residents, businesses, area users, etc.). | Form B6
- ❑ Review with the **Public Safety Group Supervisor** the telephoner scripts to be used: Early Notification / Voluntary Evacuation Message, Shelter-in-Place Phone Message, Evacuation Phone Message. | Form B7
- ❑ Contact special needs residents at a Level 1 Emergency and provide them with the option to evacuate. | Form B8
- ❑ Contact the other residents and area users in the EPZ and advise them to evacuate or shelter.
- ❑ Contact the schools / school buses to make arrangements for school age children (if applicable).
  - ❑ Advise that buses in the affected area leave immediately and that buses should not enter the area.
  - ❑ Request a school administrator for the reception centre to assist in managing the children and releasing them to their guardians.
- ❑ Document all resident interactions using the Resident Contact Log and report this information to the **Public Safety Group Supervisor**. Immediately advise the **Public Safety Group Supervisor** about unsuccessful contacts and any residents requiring assistance. | Form B3
- ❑ Document all activities using the ICS 214 Individual Activity Log. | Form ICS 214
- ❑ Assist with post-incident activities.

Shelter-In-Place Instructions
FORM B7

- ❑ Immediately gather everyone indoors and stay there. Do not leave even if you see people outside.
- ❑ Close and lock all outside doors and windows. Tape gaps around doors and windows. Leave all inside doors open.
- ❑ Turn off appliances or equipment that blows out indoor air or sucks in outside air.
- ❑ Turn down furnace thermostats to the minimum setting and turn off air conditioners.
- ❑ Extinguish all potential sources of ignition (do not smoke or attempt to start your vehicle).
- ❑ Stay off of the phone so that you can be contacted by emergency personnel.
- ❑ Stay tuned to local radio and television for possible updates.

Note: For the full Shelter-in-Place instructions see page 2 of the Shelter-in-Place Telephoner Text form located in SECTION 6.0: FORMS.

1. Who to Contact

- ❑ Residents
- ❑ Schools / School Bus Transportation
- ❑ Businesses
- ❑ Public Facilities
- ❑ Recreation Areas
- ❑ Urban Centres (contact local authority to coordinate)
- ❑ Area Users (other oil and gas operators, rail, logging, etc.)
- ❑ Trappers
- ❑ Guides / Outfitters
- ❑ Grazing Lease / Allotment Holders

Priority is given to:
- ❑ Those closest to the hazard
- ❑ Those downwind of the hazard
- ❑ Those with sensitivity issues (health issues, require assistance, etc.)

Tips

- ❑ Ensure you have enough personnel to quickly and efficiently shelter / evacuate the required residents / area users.
- ❑ A general guideline is to have one **Telephoner** for every seven residences that need to be contacted and one **Telephoners Leader** for every ten **Telephoners**.
- ❑ Special needs residents should be contacted at a Level 1 Emergency and given the option to evacuate.

> Response personnel cannot force an evacuation or restrict access to the area unless proper authority has been granted. The authority for forced evacuation is gained only through the declaration of a Local State of Emergency by the local authority.

2a. Shelter-In-Place Phone Message

Hello, this is _____ *(your name)* of _____ *(company name)* .
Is this the _____ *(name)* residence at _____ *(telephone number)* ?
_____ *(company name)* is responding to a *(potential)* emergency at _____ *(location)* in your area.

For your safety, it is extremely important that you, and those with you, stay indoors until the potential hazard no longer exists, or you are advised to evacuate.

To help us understand your immediate needs, we need to know:

How many people are at your location now?

    Adults _____
    Children _____

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to get in doors or stay out of the area?

    ☐ Yes   ☐ No

IF YES *Whom?* _____
    Location of the person(s) _____
    We will send someone to find them as soon as possible.

Do you have children in school at this time?

    ☐ Yes   ☐ No

IF YES *What school?* _____
    Children's names _____
    We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.

Do you have the "Shelter-in-Place" instructions previously provided to you by _____ *(company name)* ?

    ☐ Yes   ☐ No

IF YES Please follow the Shelter-in-Place instructions located inside the resident pamphlet.

IF NO *Verbally walk the resident through the Shelter-in-Place instructions on the next page.*

Do you understand what I have told you?

Is there an alternate number we can contact you at? _____

If you have any urgent questions, please contact _____ *(company name)* at _____ *(telephone number)* .
Thank you for your cooperation.
(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

Note: Refer to Shelter-in-Place instructions on page 2 of the Shelter-in-Place Phone Message located in this section.

2b. Evacuation Phone Message

Hello, this is _____ *(your name)* of _____ *(company name)* .
Is this the _____ *(name)* residence at _____ *(telephone number)* ?
_____ *(company name)* is responding to a *(potential)* emergency at _____ *(location)* in your area.

For your safety, it is extremely important that you and your family leave your residence immediately and travel in a *north / east / south / west* direction to our reception centre located at:

To help us understand your immediate needs, we need to know:

How many people are at your location now?

    Adults _____
    Children _____

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to evacuate away from the area?

    ☐ Yes   ☐ No

IF YES *Whom?* _____
    Location of the person(s) _____
    We will send someone to find them as soon as possible.

Do you have children in school at this time?

    ☐ Yes   ☐ No

IF YES *What school?* _____
    Children's names _____
    We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.

Do you require evacuation / transportation assistance?

    ☐ Yes   ☐ No

IF YES We are sending someone to assist you. Please stay indoors and close all doors and windows until a Rover or the local police arrive to evacuate you.

IF NO *Provide the resident with:*
    ☐ *Directions to safely travel to the reception centre*
    ☐ *A list of items to bring with them to the reception centre (medications, cell phone, etc.)*
    ☐ *An idea of how long they may be expected to stay at the reception centre*
    ☐ *The option to bring their house pets to the reception centre*

Please contact _____ *(company name)* if you are unable to make it to the reception centre for any reason. Please keep your phone line free so that we can contact you if necessary.

Is there an alternate number we can contact you at? _____

A company representative at the reception centre will address any questions you may have and will make arrangements for your temporary accommodations. Do you understand everything I have told you? Are you leaving immediately?

If you have any urgent questions, please contact _____ *(company name)* at _____ *(telephone number)* .
Thank you for your cooperation.
(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

Telephoner Communication Flow

Telephoners receive a list of residents / area users from the Public Safety Group Supervisor. → Provide appropriate message →

- Shelter-in-Place Message → Provide Public Safety Group Supervisor with a list of unsuccessful contacts.
- Evacuation Message → Provide Public Safety Group Supervisor with a list of unsuccessful contacts and those requiring evacuation assistance.
- Voluntary Evacuation Message → Provide Public Safety Group Supervisor with a list of unsuccessful contacts, those choosing to evacuate, and those requiring evacuation assistance.

→ Public Safety Group Supervisor to dispatch Rovers

---

3. Record Information

Record information on the following forms located within this section:
- ❑ Resident Contact Log
- ❑ ICS 214 Individual Activity Log
- ❑ Voluntary Evac Message
- ❑ Shelter-in-Place Message
- ❑ Evacuation Message

Form ICS 214 | Form B3 | Form B6 | Form B7 | Form B8

Reporting and Contacts

Telephoners report to the **Public Safety Group Supervisor**.

Name: _____

Phone Number: _____

Reception Centre
Location: _____

Phone Number: _____

Wind Direction: _____

Telephoners

B3 Resident Contact Log

Date: _____   Responder Name: _____

Page _____ of _____   Responder Position: _____   Responders Phone No.: _____

Time	Resident name	Resident ID	Shelter / Evacuate	Number of people		Assistance or transportation required?	Comments
				Inside	Outside		
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	

B6 Early Notification / Voluntary Evacuation
Phone Message

Before calling, determine a safe evacuation route for the residents to travel, away from the emergency hazard area, upwind if possible, towards the reception centre.

Hello, this is ___(your name)___ calling from ___(company name)___. Is this the ___(name of residence / business)___ at ___(telephone number)___?

___(Company name)___ is responding to a *(potential)* emergency at ___(location)___ in your area.

You are in no danger at this time. All efforts are being made to resolve the problem and this phone call is only to inform you and provide you with an early notification.

To help us understand and your immediate needs we need to know:

How many people are at your location now? *(Adults)* _____ *(Children)* _____

Do you wish to leave your residence at this time?

IF YES Please travel in a ___north / east / south / west___ direction to our reception centre located at:

_____

IF NO Please standby for further contact. Please do not use your telephone for outgoing calls as this may prevent us form contacting you with updated information or when the problem has been eliminated.

If you have urgent questions, please contact _____ *(company name)* **at** ___(telephone number)___.

Thank you for your cooperation.

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

ICS 214 Activity Log

Incident Name:

Date / Time Initiated:

Prepared by: Position / Title:

Personnel Assigned

Name	ICS Position	Location

Activity Log

Time	Actions

Initial Response:
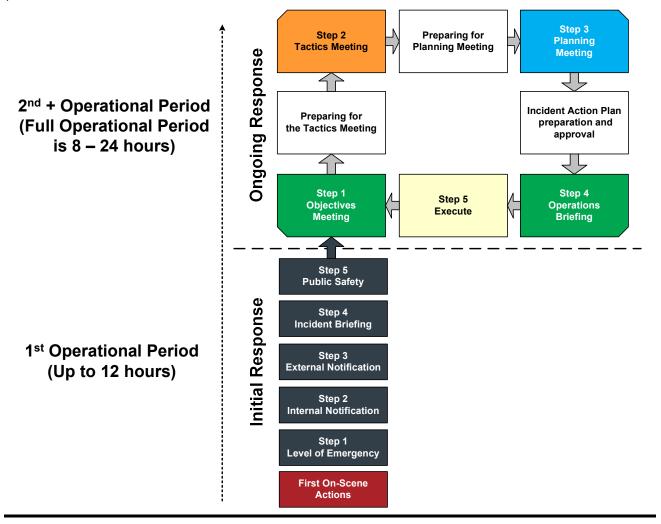
All incidents begin with the initial response (reactive phase) during the first operational period. At the onset of an emergency response an Initial Emergency Report (A1) Form is completed to determine the severity of the emergency and extent of the response. 95% of emergency responses begin and end in the first operational period.

After response personnel ensure their own personal safety by following the First On-Scene Actions, the Five Step Initial Response Guide, and associated tools, provide a structure for the Incident Commander to formulate a response and outlines the steps (key considerations) that need to be addressed and re-addressed when evaluating the incident and associated emergency response.

Ongoing Response:

An ongoing response (proactive phase) is required for an extended emergency response that spans over multiple operational periods and revolves around establishing the objectives, strategies, and tactics for the next upcoming operational period. 5% of incidents require an ongoing response, but once engaged emergency responders will circulate through this cycle multiple times.

After the initial response has been completed, the Five Step Ongoing Response Guide and associated tools provide a cycle to plan the next steps of the emergency response. This continual cycle provides a structure for the Command Staff and General Staff to complete the Incident Action Plan (IAP) and associated documents. The ongoing response cycle and an associated IAP must be completed for each operational period until the incident is stood down.

Section 2: Ongoing Response

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Step 1 - Objectives Meeting

- Incident Commander conducts the meeting.
- Review the **ICS 201** form completed during the Initial Response phase and begin the **ICS 209** form by evaluating the current incident status.
- Identify issues/problems to resolve using the PPOST methodology.
- Develop **SMART** (Specific, Measurable, Attainable, Realistic, & Time-Sensitive) objectives to mitigate the identified problems.
- Prioritize the objectives using the **ICS 202** form.
- Complete the **ICS 202** form and identify initial staffing on the **ICS 207** form.
- Utilize IAP Checklist (**A4**) to complete the IAP.

Prepare for Tactics Meeting
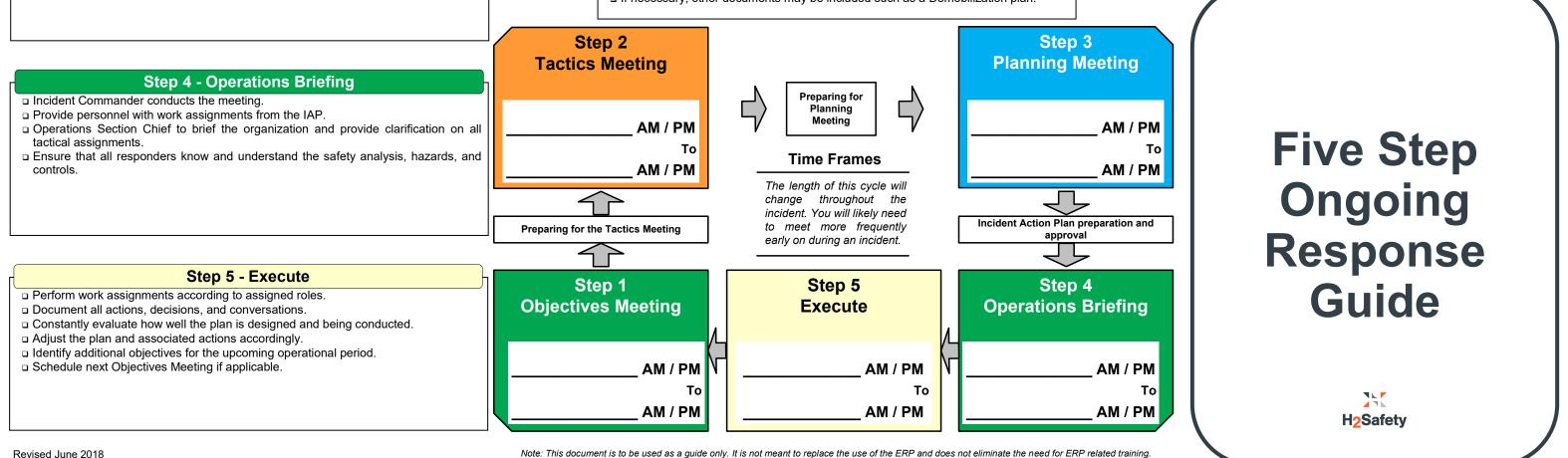
- Develop draft strategies and tactics for each defined objective.
- Outline work assignments and develop an operations organization chart using the **ICS 207** form.
- Identify future tactical plans to optimize the Tactics Meeting.
- Begin to prepare a safety analysis once all hazards have been identified using **ICS 215A** form.

Step 2 - Tactics Meeting

- Operations Section Chief conducts the meeting.
- Review the incident status using the **ICS 209** form that was completed during the Objectives Meeting.
- Operations Section Chief proposes strategies and tactics.
- Evaluate and assign resources and personnel.
- Ensure that all strategies have associated tactics to ensure responder safety and complete the **ICS 215A** form.
- Complete the **ICS 215** form and update the **ICS 207** form started during the Objectives Meeting.

Prepare for Planning Meeting

- Review and update the **ICS 209** form.
- Confirm availability of resources and locations.
- Prepare all information for review at the Planning Meeting.
- Gather any additional incident documentation (i.e., maps and status boards).

Step 3 - Planning Meeting

- Planning Section Chief conducts the meeting.
- Review the incident status using the updated **ICS 209** form.
- Confirm the strategies and tactics assigned to achieve the defined objectives.
- Ensure that all assigned tactics can be performed safely and follow the defined safety analysis using the **ICS 215A** form.
- Incident Commander to give tentative approval of proposed plan and review with key response personnel.

Incident Action Plan Preparation and Approval

- Produce a coordinated and sustainable Incident Action Plan using the IAP Checklist (**A4**), ICS forms **202**, **207**, **209**, **215**, **215A**, and gather any additional incident documentation (i.e., maps and status boards).
- Receive final approval from the Incident Commander.
- Define work assignments and break the work into manageable units.
- If necessary, other documents may be included such as a Demobilization plan.

Step 4 - Operations Briefing

- Incident Commander conducts the meeting.
- Provide personnel with work assignments from the IAP.
- Operations Section Chief to brief the organization and provide clarification on all tactical assignments.
- Ensure that all responders know and understand the safety analysis, hazards, and controls.

Step 5 - Execute

- Perform work assignments according to assigned roles.
- Document all actions, decisions, and conversations.
- Constantly evaluate how well the plan is designed and being conducted.
- Adjust the plan and associated actions accordingly.
- Identify additional objectives for the upcoming operational period.
- Schedule next Objectives Meeting if applicable.

Step 2 Tactics Meeting

_____ AM / PM
To
_____ AM / PM

Preparing for Planning Meeting

Step 3 Planning Meeting

_____ AM / PM
To
_____ AM / PM

Time Frames

The length of this cycle will change throughout the incident. You will likely need to meet more frequently early on during an incident.

Preparing for the Tactics Meeting

Step 1 Objectives Meeting

_____ AM / PM
To
_____ AM / PM

Step 5 Execute

_____ AM / PM
To
_____ AM / PM

Step 4 Operations Briefing

_____ AM / PM
To
_____ AM / PM

Incident Action Plan preparation and approval

Five Step Ongoing Response

Ongoing Response

| Step 2 Tactics Meeting | Preparing for Planning Meeting | Step 3 Planning Meeting |

Preparing for the Tactics Meeting

Time Frames
The length of this cycle will change throughout the incident. You will likely need to meet more frequently early on during an incident.

Incident Action Plan and Approval

| Step 1 Objectives Meeting | Step 5 Execute | Step 4 Operations Briefing |

Proactive Phase

Refer to Initial Response in Section 1: Initial Response

- Step 5 Public Safety
- Step 4 Incident Briefing
- Step 3 External Notification
- Step 2 Internal Notification
- Step 1 Level of Emergency
- First On-Scene Actions

Note: Ongoing Response is cyclical and takes place over one or more operational periods (optimally 8 to 12 hours). It is designed to outline the Incident Action Plan for the next operational period.

Five Step Ongoing Response Guide

H2Safety

Note: This document is to be used as a guide only. It is not meant to replace the use of the ERP and does not eliminate the need for ERP related training.

Objectives Meeting

H2Safety

Owner: Incident Commander	Date:	Time:

Roles below will attend only if designated and available

Attendees:

☐ *Incident Commander:*	☐ *Planning Section Chief:*
☐ *Deputy Incident Commander:*	☐ *Logistics Section Chief:*
☐ *Operations Section Chief:*	☐ *Finance/Admin. Section Chief:*
☐ *Planning Section Chief:*	☐ *Safety Officer:*
☐ *Liaison Officer:*	☐ *Other:*
☐ *Information Officer:*	☐ *Other:*

Summary:

The objectives of this meeting are to:
- Have a completed **ICS 202** form agreed upon by all attendees (Command and General Staff).
- Establish objectives and priorities for the upcoming operational period.
- Begin an **ICS 209** Incident Status Summary report.
- Begin identifying all required roles on the **ICS 207** form.
- Begin addressing the Incident Action Plan Checklist (**A4**).
- Schedule and prepare for the Tactics Meeting.

Resources: ICS 202, 207, 209 forms, and the IAP Checklist (A4)

Agenda Items:

☐ Status Update and review the **ICS 201** Incident Briefing form.

☐ Determine incident priorities. Reference the PPOST methodology.

☐ Establish an incident organization that is capable of meeting initial and long-term challenges required to mitigate the incident.

☐ Determine the incident response objectives and complete and **ICS 202** Incident Objectives form. They must be **SMART** (Specific, Measurable, Attainable, Realistic, & Time Sensitive).

☐ Identify initial staffing requirements and begin filling out the **ICS 207** Incident Organizational Chart.

☐ Identify and select incident support facilities.

☐ Review the incident objectives for the next operational period so your management team can begin work on the IAP.

☐ Document the incident status to relay to all responding personnel.

Key Points:

- **Ensure that the meeting is documented / recorded.** (Utilize the back side of this page.)

- Define the hours of work and operational period.

- Utilize Incident Action Plan Checklist (**A4**).

- Identify constraints and limitations.

- Clarify any staff roles and responsibilities.

- Determine expectations of the team for how all communications are to be made.

- Discuss and agree on process issues such as resource ordering, cost accounting, operations security, and sensitive information.

- Continue to develop tasks for Command and General Staff.

- Agree on division of command workload, such as press and agency briefings.

Notes:

Tactics Meeting

H2Safety

Owner: Operations Section Chief	Date:	Time:

Roles below will attend only if designated and available

Attendees:

☐ *Incident Commander:*	☐ *Planning Section Chief:*
☐ *Deputy Incident Commander:*	☐ *Logistics Section Chief:*
☐ *Operations Section Chief:*	☐ *Finance/Admin. Section Chief:*
☐ *Planning Section Chief:*	☐ *Safety Officer:*
☐ *Liaison Officer:*	☐ *Other:*
☐ *Information Officer:*	☐ *Other:*

Summary:

The objectives of this meeting are to:
- Define tactics, work assignments, and resources to meet actions identified during the Objectives Meeting.
- Have completed **ICS 215** and **215A** forms agreed upon by all attendees (Command and General Staff).
- Update the **ICS 207** Incident Organization Chart.
- Refer to Incident Action Plan Checklist (**A4**) and continue to add to items accomplished.
- Schedule and prepare for the Planning Meeting.

Resources:	**ICS 209, 215, 215A, and IAP Checklist (A4)**

Agenda Items:

☐ Review **ICS 209** Incident Status Summary.

☐ Review incident objectives.

☐ Define tactics to complete objectives set out during the Objectives Meeting.

☐ Provide an operational update and identify tactics to deal with incident.

☐ Identify roles and responsibilities that have to be performed to implement tactics.

☐ Build on already established **ICS 207** Incident Organization Chart, check span-of-control, and match up with **ICS 215** assignments.

Complete the Operational Planning Worksheet, **ICS 215** (Utilize one form for every established objective).
    ☐ Identify work assignments
    ☐ Identify resources requirements to achieve each work assignment
    ☐ Identify overhead staffing needs to support each work assignment
    ☐ Identify specialized equipment and supply needs for each work assignment
    ☐ Specify reporting times and location for personnel

Complete the Incident Action Plan Safety Analysis, **ICS 215A**.
    ☐ Identify potential hazard types
    ☐ Identify mitigations for associated hazard types

☐ Identify support facilities and locations.

Key Points:

- **Ensure that the meeting is documented / recorded.** (Utilize the back side of this page.)

- Review planned actions against incident objectives and priorities.

- Utilize a map or chart to depict the operational areas, support facilities, and any key information.

- Discuss any applicable open action items.

- Consider contingencies and secondary options.

Notes:

Planning Meeting

Owner: Planning Section Chief	Date:	Time:

Roles below will attend only if designated and available

Attendees:

☐ *Incident Commander:*	☐ *Planning Section Chief:*
☐ *Deputy Incident Commander:*	☐ *Logistics Section Chief:*
☐ *Operations Section Chief:*	☐ *Finance/Admin. Section Chief:*
☐ *Planning Section Chief:*	☐ *Safety Officer:*
☐ *Liaison Officer:*	☐ *Other:*
☐ *Information Officer:*	☐ *Other:*

Summary:

The objectives of this meeting are to:
- Finalize an Incident Action Plan with the necessary forms based on the objectives, tactics, and strategies outlined from the previous command meetings.
- Schedule and prepare for the Operations Briefing.

Resources: | **IAP Checklist (A4) and all associated ICS forms**

Agenda Items:

☐ Review Incident Action Plan forms (**ICS 202, 207, 209, 215**, and **215A**).

☐ Review Command's incident objectives, priorities, decisions, and direction.

☐ Provide briefing on current situation, resources at risk, weather forecast, and incident projections.

☐ Operations Section Chief provides briefing on:
    ☐ Current operations.
    ☐ An overview on the proposed plan including strategy, tactics or work assignments, resource commitment, contingencies, organization structure, and needed support facilities.

☐ Review the proposed plan to ensure that Command direction, priorities, and operational objectives are met.

☐ Delegate assignments and deadlines to appropriate staff members to assure timely and effective IAP development.

Key Points:

- **Ensure that the meeting is documented / recorded.** (Utilize the back side of this page.)

- Review IAP Checklist (**A4**) to ensure that all critical materials have been accounted for in the IAP.

- Planning Section Chief brings meeting to order, cover ground rules, and review agenda.

- Planning Section Chief requests tacit Command approval of the plan as presented.

- Planning Section Chief reviews and validates responsibility for any open actions and management objectives.

- Planning Section Chief conducts round table of Command and General Staff to solicit their final input and commitment to the proposed plan.

Section 2: Ongoing Response

Notes:

Operations Briefing

H2Safety

Owner: Incident Commander	Date:	Time:

Roles below will attend only if designated and available

Attendees:

☐ *Incident Commander:*	☐ *On-Site Group Supervisor*
☐ *Deputy Incident Commander:*	☐ *Public Safety Group Supervisor*
☐ *Operations Section Chief:*	☐ *Air Monitor Team Lead*
☐ *Planning Section Chief:*	☐ *Roadblock Team Lead*
☐ *Liaison Officer:*	☐ *Rover Team Lead*
☐ *Information Officer:*	☐ *Telephoner Team Lead*
☐ *Planning Section Chief:*	☐ *Reception Centre Representatives*
☐ *Logistics Section Chief:*	☐ *Other:*
☐ *Finance/Admin. Section Chief:*	☐ *Other:*
☐ *Safety Officer:*	☐ *Other:*
☐ *Staging Area Manager:*	☐ *Other:*

Summary:

The objectives of this meeting are to:
- Review a summary of the incident status with all responders.
- Relay objectives, tactics, and strategies.
- Reinforce/relay the safety message.
- Assign roles & responsibilities and tasks for all responders to accomplish.
- Execute the response.
- Tentatively schedule next Objectives Meeting and identify potential problems/issues to address in the next operational period.

Resources: **IAP Checklist (A4) and all associated ICS forms**

Agenda Items:

☐ Planning Section Chief briefly walks through the IAP components and makes changes as needed.

☐ Operations Section Chief conducts roll call of the Operation Section Supervisors and provides a briefing on emergency response.

☐ Operations Section Chief briefs supervisory personnel on their assignments along with clarification on any of their issues and concerns.

☐ Safety Officer covers major safety issues.

☐ Logistics Section Chief covers logistical support of operations (communications, supply, transportation, medical, etc).

☐ Finance / Admin. Section Chief covers time & cost tracking, procurement, and compensation process.

☐ General Staff to cover issues applicable to Operations Section personnel.

Key Points:

- **Ensure that the meeting is documented / recorded.** (Utilize the back side of this page.)
- Planning Section Chief opens briefing, covers ground rules, agenda, and conducts roll call of Command and General Staff members.
- Establish a briefing and message for all responders.
- Review pre-determined public and media statements.
- Planning Section Chief solicits final comments and adjourns briefing.

Notes:

Section 3: Communications & Media

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Media Relations and Generic Media Statement

Any incident that affects the environment, the health and safety of individuals, or causes extensive property damage could be a news "item". When such an incident occurs, the media should not be avoided. The key is to establish good rapport with the media early in the life of the emergency. Open and honest communication will help to create favourable public opinion and could help to prevent the public from overreacting to the incident.

Media releases are generated and released as significant developments occur. The company is expected to coordinate media releases with the relevant government agencies prior to release to provide consistency and accuracy of information. Information is communicated through written news releases, news conferences, and any other effective means that the company chooses to use. The company must identify a spokesperson to carry out this role and to interact with applicable government agencies.

Media releases will be developed by the Emergency Support Team in conjunction with the applicable regulatory agency. The Emergency Support Team will assign a Corporate Media Spokesperson to deliver the approved messages.

Media at the field level will be coordinated by the Information Officer with the Support of Communications / Media from the Emergency Support Team. If media have arrived at the emergency site and the designated Information Officer is not yet available, only the Incident Commander or their designate can act as the company spokesperson, and will issue only the information below.

Future statements will be prepared by the Emergency Support Team and should be issued only by the designated Corporate Media Spokesperson. All media statements will be reviewed with the regulatory agency's Media Coordinator.

All information that is given to the media should be recorded. See **Section 6: Forms** for the C2 Media Contact Log.

Generic Media Statement

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

Media Management

- Do not wait until you are contacted by the media to react to their inquiries. By preparing in advance, the company will appear to be organized, aware, and actively responding to the situation. The essence of effective media management is preparation in advance of any media contact.

- It is important when contacting the media with a news release that you do not favour one media organization or agency over another. To minimize the chances of creating a prejudicial situation, deal solely with major umbrella press agencies.

- If media representatives are not provided with the basic information, it can be assumed that they will fill the gap with material from less reliable sources.

Be aware at all times that it is possible for the media or others to be monitoring your radio, cellular phone, or telephone conversations.

On-Site Media Spokesperson

Depending on the specific emergency an on-site spokesperson may be required to handle all on-camera activities requested by the media. Only approved and trained spokespeople will be allowed to provide comment to the media. The Emergency Support Team will identify any and all media spokespersons. The Information Officer or Incident Commander may serve as the on-site Media Spokesperson or the Emergency Support Team may send the Corporate Media Spokesperson to the site. This representative will endeavor to maintain a favourable public image on behalf of the company. It is important that they keep in mind the following:

- The Dos and Don'ts of conducting yourself on camera; 75% of information comes from non-verbal actions (gestures, tone, posture, etc.)

- Public appearance, ensuring appropriate and approved wardrobe

- Preparation in communicating the media release in advance so the message feels natural

- How to handle impromptu or "off the record" inquiries from the media

Managing the Media On-Site

Depending upon the size and/or scope of the emergency to the incident site, the media will likely travel to site and attempt to secure coverage of the situation. Usually the size and nature of an emergency will determine the amount of media attention garnered. It is important everyone on-site understands how to properly manage the media and that only designated individuals are to speak to the media. It is recommended that only individuals with adequate media training have even casual interactions with the media.

Media Briefing Areas are to be designated by the Incident Commander if advised by the Communication & Media position. The Information Officer will, if required by the Emergency Support Team and Incident Commander, determine the need for media management at the incident site.

As appropriate, the Information Officer should be designated to oversee local news media management. In order to address the needs of the media at the incident site, the following guidelines should be considered:

- If practical, an information centre will be set up nearby the incident site. All on-site media will be informed that this will be the only place where information is to be released.

- During an emergency situation, media access to company property is strictly prohibited unless prior approval has been given by the Emergency Support Team. If the Incident Commander deems the situation safe and access is granted to company property, media personnel must be accompanied at all times and wearing appropriate personal protective equipment (PPE).

- Ensure that if any media personnel are granted access on-site all potential hazards are identified and handled appropriately prior to their arrival (i.e. all on-site personnel are wearing proper PPE, operating equipment safely, etc.).

- With the exception of providing the initial prepared company statement, any requests by the media for information or interviews should be referred to the Information Officer.

- For an emergency that lasts more than 24 hours, consideration will be given to establishing a newsroom for all required personnel.
    - Ensure it is located a safe distance away from the incident.
    - Ensure proper internet and telephone access is made available.
    - Large enough to accommodate all of the potential media personnel.

Internal Communication

Internal communication plans for company personnel must include:

- Identification of primary and secondary communication methods during an incident.
- Procedures to control flow of information*:
  - Ensure facts and relevant information are distributed to key responders
  - Proper management of sensitive information
  - Camera and cellphone photo restrictions
  - Social media protocol

* Note: These procedures are developed by the Information Officer during the incident.

Communicating with the Public

Communication plans for contacting affected parties must be in place:

- When affected parties are within the Hazard Planning Zone (HPZ) / Emergency Planning Zone (EPZ) at the beginning of drilling and initial completion operations.
- A minimum of 24 hours before drilling operations enter a sour zone.
- At the conclusion of drilling and initial completion operations.
- At the beginning and conclusion of other operations including workovers, flaring, fracking, etc.

Information Disseminated to the Public

The company must make the following information available to the public, while maintaining documentation, as soon as possible during an incident:

- **To the affected public at the onset of the incident:**
  - Type and status of the incident.
  - Location and proximity of the incident to people in the vicinity.
  - Public protection measures to follow, evacuation instructions, and any other emergency response measures to consider.
  - Actions being taken to respond to the situation, including anticipated time period.
  - Contacts for additional information.
- **To the affected public during the incident:**
  - Description of the products involved and their short-term and long-term effects.
  - Effects the incident may have on people in the vicinity.
  - Areas impacted by the incident.
  - Actions the affected public should take if they experience adverse effects.
  - An explanation of the steps taken to address concerns.
  - An explanation of the steps to be taken to prevent similar emergencies in the future.

Information Disseminated to the Public, continued

- **To the general public during the incident:**
    - Type and status of the incident.
    - Location of the incident.
    - Areas impacted by the incident.
    - Description of the products involved.
    - Contacts for additional information.
    - Actions being taken to respond to the situation, including anticipated time period.
- **To the evacuated or sheltered public post-incident:**
    - Status of recovery.
    - Financial reimbursement information.
    - Contacts for additional information.

Preparing a Preliminary Media Statement

This verbal or written statement is the initial information given only to the media by the Information Officer, Incident Commander (or alternate) when the company's designated Media Spokesperson is unavailable, or authorizes a press release at the local level. See **Section 6: Forms** for the C1 Preliminary Media Statement form.

The preliminary statement shall contain:
- What, when, and where the incident occurred:
    - State the general nature and description of the incident.
    - Associate the incident location to the nearest major centre and the exact time the incident began or was discovered.
    - For example: At 11:00 am, today, September 13th, 2012, a warehouse at our battery location northeast of Wainwright caught on fire.
- Injuries / fatalities / damages:
    - Clearly distinguish the severity of the injuries sustained and if any fatalities occurred.
    - State the number of people currently receiving treatment.
    - Ensure no names are released to the media; it is important to keep this information private until all families and next-of-kin notifications are made.
    - For example: We have confirmed that three employees sustained injuries, two minor and one major. All of the injured casualties have been transported to the nearest care facilities and are receiving treatment.
- The current status of the emergency:
    - Indicate the nature of the situation; i.e. what is being done by whom.
    - For example: Emergency crews currently have the fire under control and local authorities are investigating the cause. We are actively notifying the employee's families of the incident.
- When to expect more information:
    - For example: Our designated spokesperson will be issuing a formal statement once we have more information confirmed. Thank you for your cooperation and we will not be accepting any questions at this time.

Preparing a Preliminary Media Statement, continued

What not to do:

- Don't downplay the seriousness of the event or speculate on volumes, damage or timelines.

- Don't point fingers; liability will be determined later by appropriate authorities.

- Primary focus must remain on the company's commitment to addressing the response and recovery effort.

- Attempt to avoid any questions if possible, as designated media personnel should handle all media questions.

- Avoid saying "no comment." It sounds like you're hiding something. If necessary, explain why it is not appropriate or possible for you to answer the question.

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Section 4: Emergency Response Procedures

H2Safety

Public Protection Measures - AB

Is there potential for the release to impact beyond the lease, facility or pipeline right of way?

No → **Yes**

Evacuation begins in the IIZ and expands outwards into the PAZ downwind of the release so that members of the public are not exposed to the hazard.

No public protection measures required

Do any of the following apply:
- ☐ The release is expected to pass over quickly
- ☐ The public would be at a higher risk if evacuated
- ☐ There is not enough time or warning to safely evacuate the public
- ☐ The source and nature of the release has not been identified
- ☐ The release is an HVP product

IIZ
Initial Isolation Zone
If safe to do so, the licensee must evacuate public from the IIZ.

PAZ
Protective Action Zone
Evacuation / Shelter-in-Place all public downwind of the incident

EPZ
Emergency Planning Zone
Giving priority to those who have special needs and / or have requested early notification

Modified EPZ
Emergency Planning Zone
Any public that are outside the calculated EPZ that may be effected.

No → **Yes**

Evacuation
- ☐ Begin evacuating the public

Shelter
- ☐ Begin sheltering the public

Refer to Evacuation Phone Message in either **Section 2: Roles and Responsibilities** or **Section 6: Forms**

Refer to Shelter-in-Place Phone Message in either **Section 2: Roles and Responsibilities** or **Section 6: Forms**

Ignition must take place when one of the following conditions have been met:
- ☐ Although required, evacuation of the response zones has not taken place.
- ☐ H_2S concentrations in excess of 10 ppm over a 3-minute average in unevacuated parts of the EPZ.
- ☐ H_2S concentrations exceed 1 ppm per one hour average in urban density developments.
- ☐ Monitoring is not taking place due to weather or other unforeseen circumstances.
- ☐ The release cannot be brought under control in the short term.
  AND
- ☐ Personnel working at the site can be cleared to a safe distance.

Has ignition criteria been met?

Is there an urban centre within the EPZ?

No → **Yes**

Yes

Notify the Director of Emergency Management and the Health Authority.

Refer to the H_2S / HVP Ignition Procedure behind the Public Protection Measures tab in **Section 4: Emergency Response Procedures**

EPZ / IIZ / PAZ / Wind Direction / Plume Direction / Incident

- ☐ Continue air monitoring
- ☐ Continue evacuation / shelter procedures

- ☐ Continue air monitoring for H_2S from incomplete combustion, as well as SO_2
- ☐ Continue evacuation / shelter procedures

Is there potential for the release to impact the public outside of the EPZ?

No → **Yes**

- ☐ Continue air monitoring
- ☐ Continue evacuation / shelter procedures in the EPZ

- ☐ Work with local authority to determine the need for evacuation / shelter outside of the EPZ
- ☐ Continue air monitoring

Evacuation Requirements
Revised November 2021

For a sour gas release, the licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H_2S and SO_2. In the absence of monitored readings, responders should advise the residents to Shelter-in-Place.

H_2S Requirements	
1 to 10 ppm (3 minute average)	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H_2S must be notified.
Above 10 ppm (3 minute average)	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter

* If monitored levels over the 3 minute interval are declining (i.e., three readings show a decline from 15 ppm to 10 ppm to 8 ppm over 3 minutes), evacuation may not be necessary even though the average over the 3 minute interval would be 11 ppm. Licensees should use proper judgement in determining if evacuation is required.

SO_2 Requirements	
0.3 ppm (24-hour average)	
1 ppm (3-hour average)	Immediate evacuation of the area must take place.
5 ppm (15-minute average)	

Note: This section is based on Alberta Regulations; however, the same standards will be followed by the company for operations in other provinces.

Public Protection Measures - BC

Is there potential for the release to impact beyond the lease, facility or pipeline right of way?

No → Continue with control / containment measures

Yes →

Do any of the following apply:
- The release is expected to pass over quickly
- The public would be at a higher risk if evacuated
- There is not enough time or warning to safely evacuate the public
- The source and nature of the release has not been identified
- The release is an HVP product

No →

Evacuation
- Begin evacuating the public

Refer to Evacuation Phone Message in either **Section 2: Roles and Responsibilities** or **Section 6: Forms**

Yes →

Shelter
- Begin sheltering the public

Refer to Shelter-in-Place Phone Message in either **Section 2: Roles and Responsibilities** or **Section 6: Forms**

Evacuation begins closest to incident and expands outward downwind of the release so that members of the public are not exposed to the hazard.

Closest to Incident
If safe to do so, the licensee must evacuate public closest to the incident.

Downwind
Evacuation / Shelter-in-Place all public downwind of the incident

**HPZ
Hazard Planning Zone**
Giving priority to those who have special needs and / or have requested early notification

**Modified HPZ
Hazard Planning Zone**
Any public that are outside the calculated HPZ that may be effected.

Ignition must take place when one of the following conditions have been met:
- Although required, evacuation of the response zones has not taken place.
- H_2S concentrations in excess of 10 ppm over a 3-minute average in unevacuated parts of the EPZ.
- H_2S concentrations exceed 1 ppm per one hour average in urban density developments.
- Monitoring is not taking place due to weather or other unforeseen circumstances.
- The release cannot be brought under control in the short term (ignition decision will be made by Incident Commander. Notify Regulatory Agency intention to ignite.
  AND
- Personnel working at the site can be cleared to a safe distance.

Has ignition criteria been met?

No →

Is there an urban centre within the HPZ?

Yes → Notify the Director of Emergency Management and the Health Authority.

- Continue air monitoring for H_2S
- Continue evacuation / shelter procedures

Yes →

Refer to the H_2S / HVP Ignition Procedure behind the Public Protection Measures tab in **Section 4: Emergency Response Procedures**

- Continue air monitoring for H_2S from incomplete combustion, as well as SO_2
- Continue evacuation / shelter procedures

HPZ
Closest to Incident
Downwind
Wind Direction
Plume Direction
Incident

Is there potential for the release to impact the public outside of the HPZ?

No →
- Continue air monitoring for H_2S or SO_2
- Continue evacuation / shelter procedures in the HPZ

Yes →
- Work with local authority to determine the need for evacuation / shelter outside of the HPZ
- Continue air monitoring for H_2S or SO_2

Note: Evacuation outside the HPZ is based on air monitoring readings and not the level of emergency.

Notification and Evacuation Requirements Outside of the HPZ

For a sour gas release, the licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H_2S and SO_2. In the absence of monitored readings, responders should advise the residents to Shelter-in-Place.

H$_2$S Requirements	
1-10 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H_2S or SO_2 must be notified.
10 ppm and above (1-hour average)	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.

Note: H_2S Evacuation Level – when downwind monitoring at the nearest unevacuated residence, outside the Hazard Planning Zone, indicates a level of 10 ppm, evacuation procedures will be initiated if safe to do so.

SO$_2$ Requirements	
1-5 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H_2S or SO_2 must be notified.
5 ppm and above	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.

Revised November 2021

Public Protection Measures, continued

There are three primary public protection measures that are used to ensure the safety of the public in the event of an incident: evacuation, shelter-in-place and ignition.

Evacuation

For long-term releases, evacuation is preferred to sheltering if public safety can be assured during the evacuation process.

Evacuation is a viable public protection measure in circumstances when:

- The location of the plume is known, and safe egress routes can be assured

- The release will not likely be contained in the near future

- Visibility and road conditions are good

- The residents clearly understand their directions

Tactical Evacuation: A measure to immediately move people to a safe area as part of emergency response and operations. Does not require approval from local authority but the local authority may enact an evacuation order, if required. The local authority must be advised if a tactical evacuation has occurred. Appropriate methods must be utilized to ensure transients (hunters, trappers, recreational users, non-resident landowners, etc.) within the EPZ are located and evacuated. Refer to Section 5: Forms for Evacuation Scripts for information that should be communicated as part of the evacuation process.

Planned Evacuation: An evacuation coordinated by local government authority that can authorize evacuation alerts and orders.

Residents should also be evacuated during ongoing emergency flaring or burning if their health and safety could be affected by the operation.

Special procedures may be required for evacuating large industrial operations and/or public facilities. If large numbers of people are involved, the licensee must address assistance with transportation. Refer to the Area Specific Information Section for information regarding transportation (e.g., providing school buses) or other changes in the normal notification procedures.

The licensee must continuously assess and act on the need to expand the evacuation area, based on the specifics of the incident, including harmful levels of hazardous substances.

The licensee is expected to monitor the air quality along the edge of the EPZ to determine if sheltering or evacuation criteria have been met outside the EPZ. Evacuation outside of the EPZ must be coordinated with the Local Authority.

Appropriate methods must be utilized to ensure transients (hunters, trappers, recreational users, non-resident landowners, etc.) within the EPZ are located and evacuated. When a tactical evacuation has taken place, the appropriate local authority must be notified.

Public Protection Measures, continued

Shelter-In-Place

Shelter-in-place is considered the primary safety measure when the hazard is of a limited duration or the public would be at a higher risk if evacuated. Sheltering within a building creates an indoor buffer to protect affected individuals from higher (more toxic) concentrations that may exist outdoors. The goal is to reduce the movement of air into and out of the building until either the hazard has passed, or other appropriate emergency actions can be taken (such as evacuation).

Sheltering indoors is a viable public protection measure in circumstances when:

- There is insufficient time or warning to safely evacuate the public

- Residents are waiting for evacuation assistance

- The release will be of a limited size and /or duration

- The location of the release has not been identified

- The public would be at a higher risk if evacuated

- Escape routes traverse the hazards

Refer to either **Section 2: Roles and Responsibilities** or **Section 6: Forms** for the Shelter-in-Place Phone Message script to be used when contacting residents. Residents advised to shelter-in-place will be notified if additional measures are required, and when it is "all-clear".

Sheltering Measures for HVP Product Release

For a flammable or combustible liquid fire to start, a mixture of vapour and air must be ignited. There are many possible ignition sources:
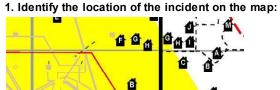
- Sparks from electrical tools and equipment

- Sparks, arcs, and hot metal surfaces from welding and cutting

- Tobacco smoking

- Open flames from portable torches and heating units, boilers, pilot lights, ovens, and driers

- Hot surfaces such as boilers, furnaces, steam pipes, electric lamps, hot plates, irons, hot ducts and flues, electric coils, and hot bearings

- Embers and sparks from incinerators, foundry cupolas, fireboxes, and furnaces

- Sparks from grinding and crushing operations

- Sparks caused by static electricity from rotating belts, mixing operations or improper transfer of flammable or hot combustible liquids

You can eliminate many ignition sources by:

- Removing open flames and spark-producing equipment

- Not smoking around these liquids

- Using approved explosion proof equipment in hazardous areas

Public Protection Measures, continued

Establishing and Isolating a Perimeter - AB

1. Identify the location of the incident on the map:

Incident Location

2. Determine the size of response zones (hazard areas):

EPZ - Emergency Planning Zone
IIZ - Initial Isolation Zone
PAZ - Protective Action Zone
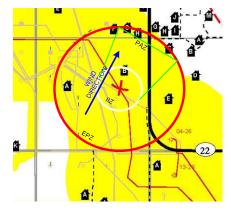
You can find this information:
a) Labeled on the map
b) In the site specific tables
c) As the yellow area on the map

If the incident is at a facility or if you have not yet confirmed the exact location of the incident, you must use the largest EPZ for the area. The largest EPZ for the area is shown in yellow on the map.

3. Determine the wind direction

Look for wind direction indications such as flags, windsocks, direction of smoke, etc..

Draw the wind direction on the map with an arrow.

Incident Location

4. Draw the zones on map:

a) EPZ - The entire hazard area

b) IIZ - Those closest to the hazard

c) PAZ - Those downwind of the hazard

5. Isolate the hazard area with roadblocks

If any residences exist between the optimal roadblock location and the EPZ, expand the EPZ to include those residences. Additionally, if any residences only route of egress is through the EPZ, expand the EPZ to include those residences.

Legend
- - - - - Other Roads
――――― Main Hwy

6. Following the appropriate provincial public protection measures chart, initiate public safety activities.
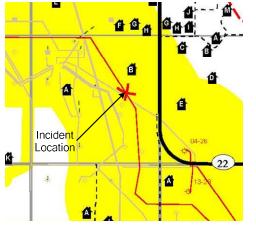
Residents in the IIZ are closest to the hazard and are the most at risk of being adversely affected.

Residents in the PAZ are the second group to be evacuated / sheltered in place as being downwind of the hazard puts them at a higher risk than the rest of the residences in the EPZ that are upwind or crosswind from the hazard.

Public Protection Measures, continued
Establishing and Isolating a Perimeter - BC
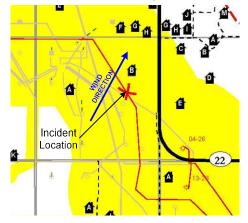
1. Identify the location of the incident on the map:
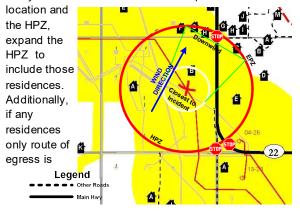
Incident Location

2. Determine the size of response zones (hazard areas):

HPZ - Hazard Planning Zone

Closest to Incident
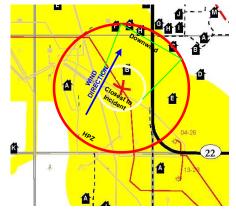
Downwind

You can find this information:

a) Labeled on the map

b) In the site specific tables

c) As the yellow area on the map

If the incident is at a facility or if you have not yet confirmed the exact location of the incident, you must use the largest HPZ for the area. The largest HPZ for the area is shown in yellow on the map.

3. Determine the wind direction

Look for wind direction indications such as flags, windsocks, direction of smoke, etc..

Draw the wind direction on the map with an arrow.

WIND DIRECTION

Incident Location

4. Draw the zones on map:

a) HPZ - The entire hazard area

b) Those closest to the hazard

c) Those downwind of the hazard

Downwind

WIND DIRECTION

Closest to Incident

HPZ

5. Isolate the hazard area with roadblocks

If any residences exist between the optimal roadblock location and the HPZ, expand the HPZ to include those residences. Additionally, if any residences only route of egress is

Downwind

WIND DIRECTION

Closest to Incident

HPZ

Legend

- - - - - Other Roads

——— Main Hwy

6. Following the appropriate provincial public protection measures chart, initiate public safety activities.

Residents closest to the hazard are the most at risk of being adversely affected.

Residents downwind of the HPZ are the second group to be evacuated / sheltered in place as being downwind of the hazard puts them at a higher risk than the rest of the residences in the HPZ that are upwind or crosswind from the hazard.

Public Protection Measures, continued

Ignition

In conjunction with shelter-in-place and evacuation strategies, the release may be ignited at the source in order to reduce public exposure to the hazard. The combustion of the hydrogen sulphide (H_2S) results in the produced sulphur dioxide (SO_2) being carried high into the atmosphere allowing additional time for the public to safely evacuate. If an immediate threat to human life exists and there is not sufficient time to evacuate the hazard area or the Emergency Planning Zone (EPZ) – whichever is bigger – the On-Site Group Supervisor is authorized to ignite the release.

Note: Only those personnel trained in ignition procedures can determine if ignition is required and operate the ignition equipment.

Ignition of an HVP product release should occur only after the position of the plume has been established, after careful deliberation, and when safe to do so.

Until such time that a decision has been made to ignite a release, the licensee should take steps to minimize any chance of unplanned ignition in the area.

Note: Initial location of the plume may be identified by the following methods:

- *Visually (i.e.; frost or condensation buildup, white cloud or dust cloud, dead vegetation, bubbling water, etc.)*

- *Auditory (i.e.; hissing or whistling sound, etc.)*

- *Smell (i.e.; smell of mercaptan – rotten eggs)*
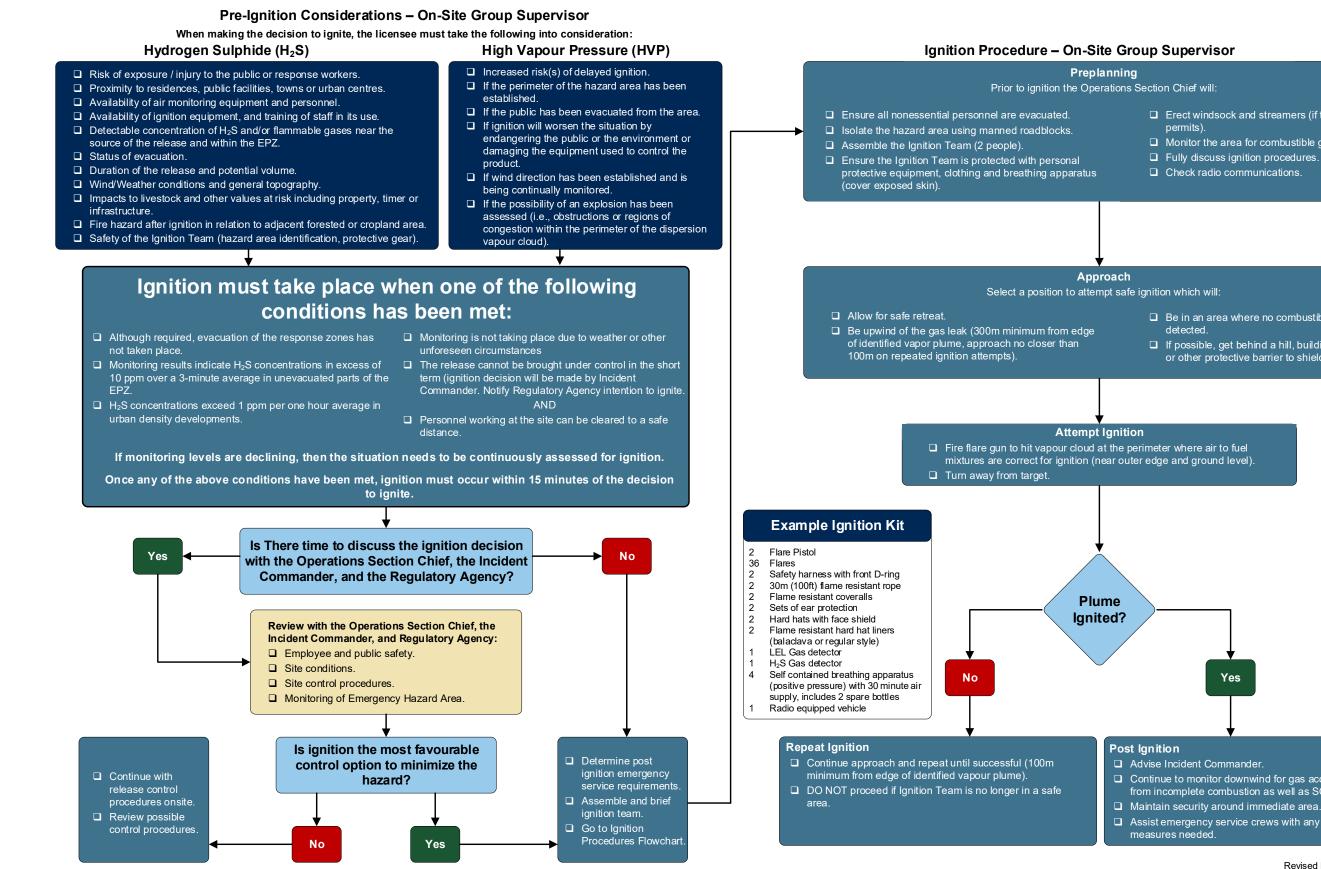
When making the decision to ignite, the licensee must take the following into consideration:

- If personnel are on-site, proceed to muster location for headcount and further instructions. Refer to Five Step Initial Response Guide in **Section 1: Initial Response** for First On-Scene Actions.

- Refer to the H_2S / HVP Ignition Procedure on the following page for further considerations.

If at all possible, the On-Site Group Supervisor must consult with higher authority individuals within the company (ideally the Operations Section Chief, Incident Commander, EOC Director, etc.) and the appropriate government regulator.

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Pre-Ignition Considerations – On-Site Group Supervisor

When making the decision to ignite, the licensee must take the following into consideration:

Hydrogen Sulphide (H₂S)

- ❑ Risk of exposure / injury to the public or response workers.
- ❑ Proximity to residences, public facilities, towns or urban centres.
- ❑ Availability of air monitoring equipment and personnel.
- ❑ Availability of ignition equipment, and training of staff in its use.
- ❑ Detectable concentration of H₂S and/or flammable gases near the source of the release and within the EPZ.
- ❑ Status of evacuation.
- ❑ Duration of the release and potential volume.
- ❑ Wind/Weather conditions and general topography.
- ❑ Impacts to livestock and other values at risk including property, timer or infrastructure.
- ❑ Fire hazard after ignition in relation to adjacent forested or cropland area.
- ❑ Safety of the Ignition Team (hazard area identification, protective gear).

High Vapour Pressure (HVP)

- ❑ Increased risk(s) of delayed ignition.
- ❑ If the perimeter of the hazard area has been established.
- ❑ If the public has been evacuated from the area.
- ❑ If ignition will worsen the situation by endangering the public or the environment or damaging the equipment used to control the product.
- ❑ If wind direction has been established and is being continually monitored.
- ❑ If the possibility of an explosion has been assessed (i.e., obstructions or regions of congestion within the perimeter of the dispersion vapour cloud).

Ignition must take place when one of the following conditions has been met:

- ❑ Although required, evacuation of the response zones has not taken place.
- ❑ Monitoring results indicate H₂S concentrations in excess of 10 ppm over a 3-minute average in unevacuated parts of the EPZ.
- ❑ H₂S concentrations exceed 1 ppm per one hour average in urban density developments.
- ❑ Monitoring is not taking place due to weather or other unforeseen circumstances
- ❑ The release cannot be brought under control in the short term (ignition decision will be made by Incident Commander. Notify Regulatory Agency intention to ignite. **AND**
- ❑ Personnel working at the site can be cleared to a safe distance.

If monitoring levels are declining, then the situation needs to be continuously assessed for ignition.

Once any of the above conditions have been met, ignition must occur within 15 minutes of the decision to ignite.

Is There time to discuss the ignition decision with the Operations Section Chief, the Incident Commander, and the Regulatory Agency?

Yes / **No**

Review with the Operations Section Chief, the Incident Commander, and Regulatory Agency:
- ❑ Employee and public safety.
- ❑ Site conditions.
- ❑ Site control procedures.
- ❑ Monitoring of Emergency Hazard Area.

- ❑ Continue with release control procedures onsite.
- ❑ Review possible control procedures.

Is ignition the most favourable control option to minimize the hazard?

No / **Yes**

- ❑ Determine post ignition emergency service requirements.
- ❑ Assemble and brief ignition team.
- ❑ Go to Ignition Procedures Flowchart.

Ignition Procedure – On-Site Group Supervisor

Preplanning
Prior to ignition the Operations Section Chief will:

- ❑ Ensure all nonessential personnel are evacuated.
- ❑ Isolate the hazard area using manned roadblocks.
- ❑ Assemble the Ignition Team (2 people).
- ❑ Ensure the Ignition Team is protected with personal protective equipment, clothing and breathing apparatus (cover exposed skin).
- ❑ Erect windsock and streamers (if time permits).
- ❑ Monitor the area for combustible gas.
- ❑ Fully discuss ignition procedures.
- ❑ Check radio communications.

Approach
Select a position to attempt safe ignition which will:

- ❑ Allow for safe retreat.
- ❑ Be upwind of the gas leak (300m minimum from edge of identified vapor plume, approach no closer than 100m on repeated ignition attempts).
- ❑ Be in an area where no combustible gas is detected.
- ❑ If possible, get behind a hill, building, tree or other protective barrier to shield yourself.

Attempt Ignition
- ❑ Fire flare gun to hit vapour cloud at the perimeter where air to fuel mixtures are correct for ignition (near outer edge and ground level).
- ❑ Turn away from target.

Example Ignition Kit

2	Flare Pistol
36	Flares
2	Safety harness with front D-ring
2	30m (100ft) flame resistant rope
2	Flame resistant coveralls
2	Sets of ear protection
2	Hard hats with face shield
2	Flame resistant hard hat liners (balaclava or regular style)
1	LEL Gas detector
1	H₂S Gas detector
4	Self contained breathing apparatus (positive pressure) with 30 minute air supply, includes 2 spare bottles
1	Radio equipped vehicle

Plume Ignited?

No / **Yes**

Repeat Ignition
- ❑ Continue approach and repeat until successful (100m minimum from edge of identified vapour plume).
- ❑ DO NOT proceed if Ignition Team is no longer in a safe area.

Post Ignition
- ❑ Advise Incident Commander.
- ❑ Continue to monitor downwind for gas accumulations from incomplete combustion as well as SO₂.
- ❑ Maintain security around immediate area.
- ❑ Assist emergency service crews with any fire control measures needed.

Revised November 2021

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Public Protection Measures, continued

Road and Airspace Closures

The company should receive authorization from local authorities or the RCMP before establishing roadblocks on public roads. The company must contact the RCMP and the transportation authority to have one-, two– or three-digit highways closed. However, if the safety of the public is in jeopardy, the company must be prepared to quickly restrict access to the area before contacting these agencies.

If warranted, the regulatory agency can issue a Closure Order that provides legal authority to close the area. The local authority may, if warranted, declare a Local State of Emergency. This grants the local authority special powers to do such things as road closures or declare mandatory evacuation.

The public must also be prevented from flying into the airspace above a gas release. It may be necessary to issue a Notice to Airmen (NOTAM) to advise pilots of restrictions in the airspace above the EPZ or to close the airspace for a certain radius from the release (a no-fly zone). NOTAMs are issued by NAV Canada and airspace closures are issued by Transport Canada's Aviation Operations Centre (AVOPS). NOTAMs or airspace closures may be requested by the licensee at a level 2 or level 3 emergency.

Air Monitoring

Air monitoring equipment is used to:

- Track/follow the plume.

- Determine if ignition criteria are met.

- Determine whether evacuation and / or shelter-in-place criteria have been met.

- Determine roadblock locations.

- Determine concentrations in areas being evacuated to ensure that evacuation is safe.

- Assist in determining when the emergency can be downgraded.

As such, H_2S, SO_2, LEL or other toxic substance concentrations will be monitored continuously during the incident response and it is crucial that Air Monitors continuously update their direct supervisor with monitored results.

- Air monitors (personal handheld, stationary and mobile) should be dispatched at a Level 1 Emergency.

- Air quality monitoring occurs downwind, with priority being directed to the nearest un-evacuated residence or area where people may be present.

- Licensee personnel will monitor and record the concentrations until a mobile air monitoring unit arrives or until the incident is over. At minimum, these readings must include LEL and H_2S.

- Mobile air quality monitoring units must be dispatched when it is evident that spill control measures are not effective and that a sour product release is likely to occur.

- For HVP releases, monitoring may occur downwind or upwind, depending on how the plume is tracking, with priority being directed to the nearest un-evacuated residence or areas where people may be present. The licensee is expected to provide monitored HVP product LEL information on a regular basis for the duration of the incident.

- If a sour gas release has been ignited, the licensee should continue to monitor response zones for H_2S from incomplete combustion, as well as SO_2.

- Ensure all equipment is operational and the appropriate documentation is available to verify testing and calibration requirements.

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Spill Response

The spill response section can be used as a quick reference by first-on-scene responders to select and implement containment and recovery tactics with spill response equipment during the first 48-72 hours of the response. This section contains a collection of inland spill tactics that can be applied using obtainable resources to a liquid product release until additional resources and personnel arrive on site. This section is a reference tool and supplement to prior training, field experience, technical instruction, and equipment operation knowledge. The licensee will rely on the training and judgment of its first-on-scene responders to select only those tactics that can be accomplished safely.

Refer to the Petroleum Industry Release Reporting Requirements chart at the end of this section to determine the TDG and Provincial Reporting Requirements for each class of chemicals (as classified by the TDG Hazard Classification System).

Spill Response Objectives and Strategies

Objectives establish the desired outcomes of an incident and are statements of intent related directly to response priorities. Priorities are situational and influenced by many factors, with life safety always being the highest priority followed by incident stabilization and property and environment. The Incident Commander comes to a consensus on a collective set of objectives with response strategies. The following table contains some standard objectives with example strategies that can be utilized to assist in the first four to six hours of a spill response.

Objectives	Strategies
Ensure the safety of citizens and response personnel	Identify hazard(s) of spilled material.
	Establish work zones (hot, warm, and cold zones).
	Establish site perimeter and access controls.
	Consider evacuation or shelter-in-place, as needed.
	Monitor air quality in impacted areas to ensure responders select appropriate Personal Protective Equipment (PPE).
	Establish aircraft restrictions.
	Develop a Health and Safety Plan for response personnel.
	Run air dispersion model to determine potential evacuation zones.
Control the source of the spill	Complete emergency shut-down procedures.
	Eliminate potential flammable vapour ignition sources.
	Initiate temporary repairs to stop the leak.
	Transfer product to an approved container or facility.
	Construct barriers to prevent spill from reaching a waterbody.
Maximize protection of environmentally sensitive areas	Implement Control Points and pre-designated response strategies.
	Identify and prioritize the environmentally sensitive areas.
	Identify Resources at Risk (RAR) in spill vicinity.
	Track oil movement and develop spill trajectories.
	Conduct visual assessments (e.g., aerial overflights, ground-truthing).
	Identify, prioritize, and flag areas used as habitat by endangered species.
	Develop/implement appropriate protection strategies.

Spill Response, continued

Objectives	Strategies
Manage a coordinated response effort	Complete or confirm notifications.
	Establish Incident Command Post.
	Ensure local government and Indigenous officials are included in response organization.
	Initiate spill response Incident Action Plan.
	Ensure mobilization and tracking of response resources.
	Account for personnel and equipment
	Maintain, complete, and log all documentation related to the incident.
	Evaluate planned response objectives vs. actual response.
Contain and recover spilled material	Deploy containment boom at the spill source.
	Deploy containment boom at appropriate recovery areas.
	Conduct open water skimming.
	Develop disposal plan.
Recover and rehabilitate injured wildlife	Establish oiled wildlife reporting hotline.
	Conduct injured wildlife search and rescue operations.
	Operate wildlife rehabilitation center.
	Establish team for injured wildlife.
Remove oil from impacted areas	Conduct appropriate shoreline cleanup efforts.
	Clean oiled structures.
	Clean oiled equipment.
Keep stakeholders informed of response activities	Provide forum to obtain stakeholder input and concerns.
	Provide stakeholders with details of response actions.
	Identify stakeholder concerns and issues and address as practical.
	Provide regulatory bodies details of response actions.
Keep the public informed of response activities	Provide timely safety announcements.
	Conduct public meeting, as appropriate.
	Conduct regular news briefings.
	Manage news media access to spill response activities.

Control Points

The objective of control points is to identify pre-planned locations where spill responders can safely and effectively deploy oil spill response equipment to intercept and limit downstream movement of oil on a watercourse. Depending on the specific conditions at the time of a spill, one or more control points may be implemented as part of a response. Control points are intended to:

1. Protect sensitive areas downstream.
2. Provide locations for oil removal and collection.

Spill Response, continued

Typically, oil spill response entails multiple parallel and simultaneous activities including:

1. Source control (valve closures, clamping and pipeline drain-down)
2. Near source response (containment using berms and recovery using pumping and skimming) Downstream response (control points)

Control points are pre-identified points along watercourse's and lakes that provide responders with key tactical information and can greatly reduce planning and implementation of containment, recovery, public protection, and wildlife protection measures during a response to a spill. Control points are typically grouped in the following categories:

1. Critical Control Points are established based on the company's asset locations and are based on the following criteria:
   a. River crossing with easy access and staging areas.
   b. Upstream of environmentally sensitive areas.
   c. Upstream or proximity to communities and public infrastructure such as drinking water intakes.
   d. Downstream of major infrastructure such as pipelines, storage, or facilities.
   e. In areas of high-volume transportation corridors.
2. Non-Critical Control Points may include the following:
   a. Recreational areas
   b. Private or public land
   c. Boat launches

When assessing the location of a control point the following factors should be considered:

1. Sites should be located downstream of the watercourse crossing and at distances that can be reached in a two- to four-hour-response time.
2. Sites should have reasonable land access.
3. Sites should have available working space for staging equipment and personnel.
4. Ideally, river flow should be slow or pooled, and/or with back eddies rather than turbulent flow conditions.
5. Ideally, sites should have public access, low banks, and should not be heavily vegetated.

Designated site-specific control points need to be reviewed at least annually. Each control point site should be visited periodically to evaluate suitability and to ensure information is accurate and complete. Old unsuitable control points should be removed, and new control points added, as a part of revisions to site specific information, as required. Control point listings should include a site description, site diagram, access description, landowner/occupant phone number, site suitability and any other information related to the site.

For a detailed list of control points, utilize the Western Canadian Spill Services (WCSS) website (http://www.wcss.ab.ca)

Spill Response, continued

Health and Safety

Committed to the protection of the health and safety of all spill response personnel and third parties whether members of the public or contractor personnel. The Site Safety Plan is intended to protect all personnel against potential health and safety hazards by providing information in identifying, evaluating, controlling risks, and explaining procedures to be followed during emergencies.

Provisions have been made to ensure that the health and safety of third parties, particularly members of the general public, is also protected. Third party protection procedures include evacuations, the monitoring of wind direction at the site of the release to determine the direction and spread of hazardous vapours and, if considered appropriate, conducting air monitoring in other areas where responders or third parties could be threatened.

Initial Site Assessment

The initial site assessment, hazard identification, and characterization will normally be performed by a minimum of two qualified persons outfitted in appropriate personal protective equipment. Where possible, a backup team should be immediately available. The information gained during the initial site assessment will be used to determine the site work zones (hot, warm, and cold zones) and in the development of the Site Safety Plan. The Site Safety Plan must be monitored on an ongoing basis and revised to reflect changing conditions. Personnel entering or already on site must be immediately advised of changes. The person responsible for the Site Safety Plan will ensure compliance is monitored whenever any person is within the spill response zones or any area that may be threatened as a result of the spill.

Safety Briefing

Response personnel and others authorized to enter the response area must be briefed on the content of the Site Safety Plan prior to entering the site. The person assigned to be responsible for site safety or their delegate will conduct this briefing. A copy of the Site Safety Plan must be available for reference at the spill site. Responders must also have access to the Safety Data Sheet (SDS) for the spilled product if the SDS does not form part of the Site Safety Plan.

1. SDS provide detailed hazard, precautionary, protection, and emergency information on hazardous products and may be obtained from the manufacturer or supplier of the product. Copies of SDS shall be available for all products used or handled at spill sites.
2. A copy of the appropriate SDS should be attached to the Site Safety Plan.
3. Contractors are required to have SDSs available for all products that they bring to spill sites.
4. The appropriate SDS or Emergency Response Guidebook should be referred to for spills or leaks of substances not specifically covered by this plan.

Initial Site Safety and Hazard Control Plan

An Initial Site Safety and Hazard Control Plan should be completed as soon as possible by one of the initial responders and updated as required. When completing the Initial Site Safety and Hazard Control Plan, some of the information may not apply during the initial stages of the response but may change within a short period, thereby altering the PPE and/or other requirements.

Spill Response, continued

The Initial Site Safety and Hazard Control Plan:

1. Aids the initial first responders in assessing hazards related to the incident.
2. States the required PPE to be used.
3. Documents important health and safety information.
4. Serves as an interim "Plan" until a Site Safety Plan is developed.
5. Assigns responsibilities.
6. Identifies "site set-up" features that may be required.
7. Upon the completion and delivery of the Site Safety Plan, the Initial Site Safety and Hazard Control Plan becomes "void".

Western Canadian Spill Services (WCSS)

WCSS maintains spill contingency plans and provides spill response equipment to all member companies that do not maintain their own full spill response plans.

WCSS - http://www.wcss.ab.ca/

Spill Contingency Plan - http://www.wcss.ab.ca/contingency-manual.shtml

Live Equipment Report - http://wcss.ab.ca/emis

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Alberta Spill & Release Reporting Requirements
All spills must be reported to your Whitecap HSE Advisor

Product	Reportable Quantities		
	Alberta *(see Note 1)*		
	Any release that may cause and adverse effect must be reported		
Product	*Onsite*	*Offsite*	*Transportation (see Note 3)*
Spills			
Crude oil, condensate liquids, oilfield waste, emulsions, diluent, etc.	2 m³ any unrefined product release that may cause, is causing, or has caused an adverse effect	All spills. Any spill from a pipeline. Regardless of volume. CER lines in excess of 1.5m³ that leaves company property or right-of-way	See Class 3
Produced water	2 m³ any unrefined product release that may cause, is causing, or has caused an adverse effect	All spills. Any spill from a pipeline. Regardless of volume	No TDG Reporting Requirements
Diesel fuel, gasoline and other refined flammable liquids (*Class 3***)**	Any refined product release that may cause, is causing, or has caused an adverse effect (AER uses the TDGR as a potential indication of a release that may cause adverse effect. The release volume limits in the TDGR table are not mandatory to be called into the AER rather they are an indication of limits that may require reporting due to potential adverse effect)	Any refined product release that may cause, is causing, or has caused an adverse effect (AER uses the TDGR as a potential indication of a release that may cause adverse effect. The release volume limits in the TDGR table are not mandatory to be called into the AER rather they are an indication of limits that may require reporting due to potential adverse effect)	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Glycol (*New or used***)**			No TDG Reporting Requirements
Methanol (*Class 3 sub class 6.1***)**			Any Quantity (Packing Group II)
Lube oil (*New or used***)**			No TDG Reporting Requirements
Oilfield wastes (*See Note 3***)**			Note 3
Molten sulphur or flammable solids (*Class 4***)**			Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Pesticides (*See Note 3***)**			Reportable quantity dependent on product classification
Toxic substances (*Class 6.1***)**			Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Corrosives (*Class 8***)**			Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Other refined products (*See Note 3***)**			Reportable quantity dependent on product classification

Air Releases - Natural Gas
- Any release from a pipeline and any other release >30,000 m³
- Any quantity that could pose a danger to public safety or 50 kg (non-pipeline)

Other Reportable Releases
- Any well flowing uncontrolled
- Any burning of effluent from a well or facility
- Any Fire where loss exceeds 2m³ of oil, or 30,000m³ of gas or where damage to well head occurs

Alberta Energy Regulator (AER) 1-800-222-6514

Preliminary information – licence number, incident location, time the release occurred, type of product released, volume released, area affected (description of location & surrounding environment), on or off lease, within/outside of PLA disposition (crown land), what happened? Details of action taken & proposed to be taken

Written Release Report within 7 days emailed to the applicable AER Office. Click link for AER Office Locations & Operational Areas: https://www.aer.ca/providing-information/about-the-aer/contact-us

A final incident report is required when the cause is repaired/resolved, and cleanup is complete.

TDG Releases to be reported to local police & AB TDG: 1-800-272-9600

The Transport company or Whitecap must report incidents. Information required for reporting is the shipping name or UN number of the dangerous goods, the quantity of dangerous good that **1)** was in means of containment before the accidental release, the "dangerous goods accident" or the dangerous goods incident" and **2)** is known or suspected to have been released, a description of the condition of the means of containment from which the dangerous goods were released, including details as to whether the conditions of transport were normal when the means of containment failed, for an accidental release from a cylinder that has suffered a catastrophic failure, a description of the failure, the location of the accidental release, number of deaths, and injuries, and an estimate of the number of people evacuated.

Written report within 30 days to Transport Dangerous Goods (Place de Ville, Tower C 9th Floor, 330 Sparks St. Ottawa, Ontario K1A 0N5) or email: dor-rcd@tc.gc.ca

For a Railway vehicle report to CANUTEC at 613-996-6666.

Federally-Regulated Releases
- Report to **Environment Canada** (via Alberta Ministry of Environment and Parks) **780-499-2432 or 1-800-222-6514** for any release of a deleterious substance directly or indirectly (including through groundwater) into water frequented by fish.
- Canada Energy Regulator (CER)-regulated pipeline releases must be reported to the **Transportation Safety Board of Canada (TSBC) 24 -hour # at 819-997-7887 and CER – 403-299-2773**.
- Radioactive releases must be immediately reported to any CNSC (Canadian Nuclear Safety Commission) office and a full report must be filed within 21 days. **CNSC Western Regional Office 403-292-5181.**

Notes:

1	**In Alberta**: A release includes to spill, discharge, dispose of, spray, inject, inoculate, abandon, deposit, leak, seep, pour, emit, empty, throw, dump, place & exhaust. To be reportable, the release must be into the environment. For example, a spill that is fully contained within a building, including odours, is not considered a release into the environment. However, if there is any possibility of odours venting from the building into the environment, AER should be notified. All releases must be reported, regardless of a minimum reportable quantity, if the release has caused, is causing or may cause an adverse effect. An "*adverse effect*" is defined as "*impairment of or damage to the environment, human health or safety, or property*". All releases must be reported, regardless of a minimum quantity, if the release is into a watercourse, groundwater or surface water. **If there is any doubt, report the release.**
2	**Transportation** refers to the TDG and means all handling, offering for transport and transporting of dangerous goods by any means of transport. Handling means loading, unloading, packing or unpacking dangerous goods in a means of containment for the purposes of, in the course of or following transportation, and includes storage in the course of transportation. Transportation does not include pipelines.
3	Contact **Whitecap's HSE Advisor as Waste and TDG classification** are variable. Refer to the product's SDS to determine TDG classification; in particular amines and inhibitors can have a variety of classifications (e.g., corrosive, flammable, etc.). Refer to the *Whitecap's Waste Chart* for waste information.
4	Spill Priorities - Assess spill situation from a safety, environment and public perspective, establish site control, determine and control source of spill, contain and prevent the spill from spreading, call your supervisor and enter the incident into the incident tracking system, Call your HSE Advisor, who will: advise if the incident needs to be report to the regulator and who is reporting it, assist/coordinate cleanup coordinate waste handling, transportation and disposal. **Submit the release report to AER or 30-day letter to TDG.**

Product	Reportable Quantities — British Columbia (see Note 1) All releases must be reported, regardless of a minimum reportable quantity, if the release of a "polluting substance" is causing "pollution".		
Product	**Onsite**	**Offsite**	**Transportation (see Note 2)**
Spills			
Crude oil, condensate liquids, oilfield waste, emulsions, diluent, etc.	100 L (hydrocarbon contains no toxic substances and does not impact a water way)	Any volume. CER lines in excess of 1.5m³ that leaves company property or right-of-way	100 L (hydrocarbon contains no toxic substances and does not impact water way)
Produced water	200 L (fluid contains no toxic substances)	Any volume	No TDG Reporting Requirements
Diesel fuel, gasoline and other refined flammable liquids *(Class 3)*	100 L	Any Volume	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Glycol *(New or used)*	100 L	100 L (see Note 1)	No TDG Reporting Requirements
Methanol (*Class 3 sub class 6.1*)	100 L (see Note 3)	Any Volume	Any Quantity (Packing Group II)
Lube oil (*New or used*)	100 L	Any Volume	No TDG Reporting Requirements
Oilfield wastes *(See Note 3)*	**Note 3**	**Note 3**	**Note 3**
Molten sulphur/ flammable solids *(Class 4)*	25 kg	25 kg (See Note 1)	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Pesticides *(See Note 3)*	Reportable quantity dependent on product classification		
Toxic substances *(Class 6.1)*	5 kg or 5 L	5 kg or 5 L (See Note 1)	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Corrosives *(Class 8)*	5 kg or 5 L	5 kg or 5 L (See Note 1)	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Other refined products *(See Note 3)*	Reportable quantity dependent on product classification		
Air Release - Natural gas	10 kg or 15 m³ by volume where operating pressure is > 100 PSI; Any quantity that could pose a danger to public safety or 50 kg (non-pipeline); H2S of 10 ppm or greater, 1 m or more from source.		

Reportable Releases
- Spills of reportable amounts which occur in a secondary containment are still a reportable incident.
- All spills or releases of any amount of material which impacts water ways;
- Fresh water 10,000 L;
- Drilling or Invert mud 100 L;
- Any fluid including hydrocarbons, drilling fluids, invert mud, effluent, emulsion, etc. which contains toxic substance 25 L;

Other Reportable Releases
- Drilling kicks when any one of the following occur:
  - Pit gain of 3 m3 or greater, Casing pressure 85% of MA, 50% out of hole when kicked, Well taking fluid (LC), Associated spill, and General situation deterioration, i.e. leaks, equipment failure, unable to circulate, etc.
- Spills or release of hazardous substances which are not provincially regulated, such as radioactive substances;
- Major damage to oil and gas roads or road structures;
- Pipeline incidents, such as spills during construction phase, near misses from mobile or excavation equipment, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device (see the Pipeline Operations Manual, Section 12);
- Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only.

Emergency Management British Columbia (EMBC) 1-800-663-3456

Use the BC OGC **Incident Classification Matrix** to determine the severity of an incident (minor incident or a Level 1, 2, or 3 emergency);
Minor Incident: The incident must be report to BCOGC within **24-hrs** using the **Online Minor Incident Reporting System**, https://kermit.bcogc.ca/Login.aspx
If the minor incident involves a leak or a spill, **EMBC must be notified at 1-800-663-3456** for the Ministry of Environment to be notified.
A copy of the Form A - Minor Incident Notification Form and the Incident Classification Matrix can be found on the Emergency Response and Safety section of the BCOGC's website to help the permit holder gather the information required before entering it online. Attach the matrix, photos or any other relevant documentation. submission.

Level 1, 2, or 3 Emergency: If the incident is a Level 1, 2, or 3, it must be reported immediately (**within 1 hour**) to BCOGC incident reporting line **(EMBC 1-800-663-3456).**

Permit Holder Post Incident: The Form D Report must be submitted by the permit holder to the BCOGC within **60 days** for:
1. Any Level 1, 2 or 3 emergency incident: complete Part A-P; or
2. Any pipeline incident (including minor notification): complete Part A-U; or
3. Upon request by the BCOGC.

B.C. Ministry of Environment, local police & TDG releases via the
Emergency Management British Columbia (EMBC) 1-800-663-3456
The Transport company or Whitecap must report incidents. Information required for reporting is the shipping name or UN number of the dangerous goods, the quantity of dangerous good that **1)** was in means of containment before the accidental release, the "dangerous goods accident" or the dangerous goods incident" and **2)** is known or suspected to have been released, a description of the condition of the means of containment from which the dangerous goods were released, including details as to whether the conditions of transport were normal when the means of containment failed, for an accidental release from a cylinder that has suffered a catastrophic failure, a description of the failure, the location of the accidental release, number of deaths, and injuries, and an estimate of the number of people evacuated.
Written report within 30 days to Transport Dangerous Goods (Place de Ville, Tower C 9th Floor, 330 Sparks St. Ottawa, Ontario K1A 0N5) or email: dor-rcd@tc.gc.ca

For a Railway vehicle report to CANUTEC at 613-996-6666.

Federally-regulated releases	• Report to **Environment Canada** (via BC Provincial Emergency Program) **1-800-663-3456** for any release of a deleterious substance directly or indirectly (including through groundwater) into water frequented by fish. • Canada Energy Regulator (CER)-regulated pipelines releases must be reported to **Transportation Safety Board of Canada (TSBC) 819- 997-7887** and **CER 403-299-2773**. • Radioactive releases must be immediately reported to any CNSC (Canadian Nuclear Safety Commission) office and a full report must be filed within 21 days. **CNSC Western Regional Office 403-292-5181.**

Notes:	
1	In B.C.: All releases that impact water ways must be reported, regardless of a minimum reportable quantity. If the release of a "polluting substance" is causing "pollution". A "polluting substance" is any substance, whether gaseous, liquid or solid, that is capable of causing pollution if it were to escape to air or be spilled or escape onto land or into a waterbody. "Pollution" is the presence in the environment of substances or contaminants that substantially alter or impair the usefulness of the environment. If there is any doubt, report the release.
2	Transportation refers to the TDG and means all handling, offering for transport and transporting of dangerous goods by any means of transport. Handling means loading, unloading, packing or unpacking dangerous goods in a means of containment for the purposes of, in the course of or following transportation, and includes storage in the course of transportation. Transportation does not include pipelines.
3	**Contact Whitecap's HSE Advisor as Waste and TDG classification** are variable. Refer to the product's MSDS to determine TDG classification; in particular amines and inhibitors can have a variety of classifications (e.g., corrosive, flammable, etc.). Refer to the Whitecap's Waste Chart for waste information.
4	Spill Priorities - Assess spill situation from a safety, environment and public perspective, establish site control, determine and control source of spill, contain and prevent the spill from spreading, call your supervisor and enter the incident into the incident tracking system, Call your HSE Advisor, who will: advise if the incident needs to be report to the regulator and who is reporting it, assist/coordinate cleanup coordinate waste handling, transportation and disposal Submit the release report to BCOGC or 30-day letter to TDG.

Containment and Recovery
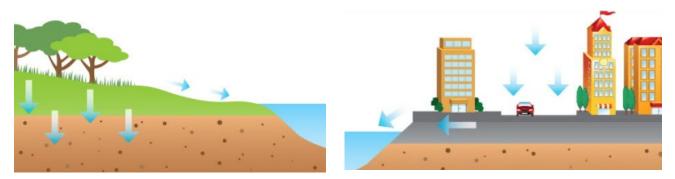
Understanding Environments – Ground and Water

A spill can occur in several different environments. The type of environment will influence the most appropriate technique to be used for the response strategy, while the fate of oil will be influenced by many other situational and local factors. The response can be complicated due to geophysical and environmental factors that can affect the oil spill's behavior.

	Ground	
	Permeable Ground	**Impermeable Ground**
Understand oil behavior:	Oil on permeable ground will flow in both horizontal and vertical directions. Penetration of ground will depend on the oil type and the porosity and permeability of the surface materials.	Oil on impermeable ground will either remain relatively static on the terrain or follow the path of least resistance if a lope is present. It is likely to collect in depressions and watercourses.
Identify resources at risk:	Examples of resources needing protection include: • Non-vegetated: mud/silt; sand; pebble/boulders. • Vegetated: grassland; forest; wetland.	Examples of resources needing protection include: • Drainage systems • Watercourses • Utilities
Response Considerations:	• Penetration of soil below the uppermost layer must be minimized. • Prevent oil from entering areas with ground water. • Drains and inlets should be blocked.	• Oil should be contained as soon as possible. • Any flowing oil should be intercepted quickly to prevent further contamination of the surface. • Drains and inlets should be blocked.

Permeable Ground

Impermeable Ground
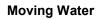
Containment and Recovery, continued

Water		
	Static Water	**Moving Water**
Understand oil behavior:	Oil on static water will float, spreading to form a thin surface layer. Water is rarely truly "static", with wind-induced waves causing spilled oil to drift.	Oil can be rapidly transported by moving water, following the direction of both wind and currents. The oil generally spreads to form a thin surface layer and will also be subjected to significant weathering processes.
Identify resources at risk:	Examples of resources needing protection include: • Ponds • Lakes • Reservoirs	Examples of resources needing protection include: • Rivers • Streams • Water intakes • Fishing areas
Response Considerations:	• Prevent oil from spreading beyond the water body and contaminating further surfaces. • Consider impact of oil moving into vegetated areas such, as reed beds. This will act to trap oil making it more difficult to recover.	• Oil should be contained as soon as possible and collected. • Intercept oil flowing downstream to prevent further contamination, while protecting resources at risk.

Static Water

Moving Water
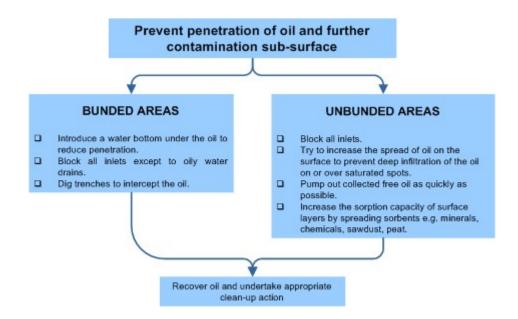
Containment and Recovery, continued

Containment of Spilled Product

On Permeable Ground

Permeable ground will pose challenges to the containment of oil as it flows in both a horizontal and vertical direction and will travel with the direction of groundwater flow once it is reached.

1. **Response Priorities**

   When responding to a spill on permeable surfaces, it is important to minimize the amount of oil that can penetrate below the surface; this should require the oil to be spread over a large surface area in the attempt to reduce head pressure on the surface to prevent penetration. This may well be the preferable option compared to long-term operations of subsoil and groundwater clean-up.

   ```
   ┌─────────────────────────────────────────────┐
   │  Prevent penetration of oil and further      │
   │       contamination sub-surface              │
   └─────────────────────────────────────────────┘
   ```

   BUNDED AREAS
   - ❏ Introduce a water bottom under the oil to reduce penetration.
   - ❏ Block all inlets except to oily water drains.
   - ❏ Dig trenches to intercept the oil.

   UNBUNDED AREAS
   - ❏ Block all inlets.
   - ❏ Try to increase the spread of oil on the surface to prevent deep infiltration of the oil on or over saturated spots.
   - ❏ Pump out collected free oil as quickly as possible.
   - ❏ Increase the sorption capacity of surface layers by spreading sorbents e.g. minerals, chemicals, sawdust, peat.

   ```
   ┌─────────────────────────────────────────────┐
   │  Recover oil and undertake appropriate       │
   │           clean-up action                    │
   └─────────────────────────────────────────────┘
   ```

2. **Retention Capacities in Permeable Surfaces**

   Each type of permeable surface will allow oil to permeate at different rates and will retain oil at varying capacities. Although the pore spaces in coarser soils are larger, oil will flow through more readily (due to gravity) thus giving a lower retention capacity.

   Finely packed sediments retain the oil in two ways; first, the oil molecules cannot pass so easily between the particles due to their size and secondly because the forces associated with capillary action hold the oil in the pore spaces.

   Surface area is also a factor in retention capacities; small grain sediments have a higher surface area and therefore hold more oil on the surface of the grains than larger grained sediments.

Containment and Recovery, continued

Surface Type	Capacity (ltrs/m³)
Stones / Coarse Gravel	5
Gravel / Coarse Sand	8
Coarse Sand / Medium Sand	15
Medium Sand / Fine Sand	25
Fine Sand / Silt	40
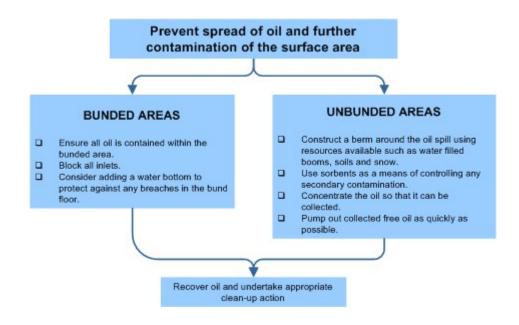
Note: Groundwater movement is very slow, usually between 0.5 m and 1.5 m per day. If oil reaches below subsurface layers, a study of the underlying hydrogeology to identify the most optimal location for the recovery of oil. Different recovery methods can then be put in place, preventing both the further spread of the oil, and flushing from the groundwater system.

On Impermeable Ground

Spill on impermeable ground will remain static until it is recovered, unless a gradient is present that may cause it to spread.

1. Response Priorities

If spills on impermeable ground, the response should first prevent the oil from further spreading and potentially contaminating other surface areas. Once contained, the oil will then need to be recovered through either manual or mechanical methods.

Containment and Recovery, continued

2. **Spills in Urban Areas**

   Urban and built-up areas will contain a vast amount of man-made surface areas sitting alongside natural environments. These man-made surface areas will often be impermeable in nature, so prevention of spread and containment remains the main priority, however, urban areas also pose a significant health and safety risk.

   Urban areas are likely to feature intricate drainage and sewage systems, therefore important to prevent the spread of oil to these highly sensitive areas where there is a risk of either contamination with sewage treatment plants and/or watercourses by:
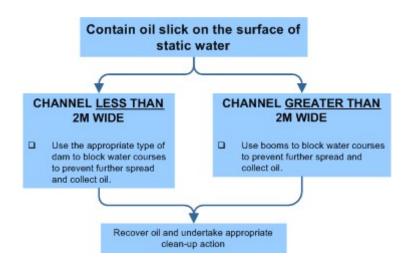
   - Using dams formed from soil, sandbags, or sorbents to protect inlets.
   - Seal drain gratings with plastic bags filled with water and sand.

   Oil and the associated fumes can also be highly volatile. As the vapours are heavier than air, it will gather in underground lines, wells, and troughs. This leads to an increased explosion risk; therefore, it is essential to minimize the potential of ignition, ensuring that:

   - Traffic is stopped and other ignition sources are extinguished.
   - Any affected system operators such as utilities, telephone and railways are informed.
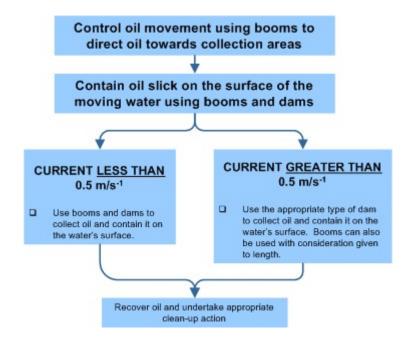
On Static Water

On larger areas of static water, boom can be used to contain the floating oil. The water bodies can be subject to wind-induced wave action, causing the oil to drift, therefore making it necessary to prioritize the containment to prevent further spreading. Where lakes etc. are fed and drained by watercourses, their inlets and outlets need to be protected, methods described in oil on moving water can be utilized.

Containment and Recovery, continued

On Moving Water

For spills that occur in rivers with currents more than 0.5 m/s, various techniques, and equipment, including booms and dams, have been developed to suit the relevant environmental conditions. In currents faster than 1 m/s, it is advisable to use techniques that allows water to flow freely subsurface while containing the oil solely on the surface of the water, such as a sorbent fence, inverted weir, culvert block, water gate or turner valley gate.

```
      ┌─────────────────────────────────────┐
      │  Control oil movement using booms to │
      │   direct oil towards collection areas │
      └─────────────────────────────────────┘
                        │
                        ▼
      ┌─────────────────────────────────────┐
      │   Contain oil slick on the surface of the │
      │    moving water using booms and dams │
      └─────────────────────────────────────┘
              │                    │
              ▼                    ▼
┌──────────────────────┐  ┌──────────────────────────┐
│ CURRENT LESS THAN    │  │ CURRENT GREATER THAN     │
│     0.5 m/s⁻¹        │  │      0.5 m/s⁻¹           │
│                      │  │                          │
│ ❑ Use booms and dams │  │ ❑ Use the appropriate    │
│   to collect oil and │  │   type of dam to collect │
│   contain it on the  │  │   oil and contain it on  │
│   water's surface.   │  │   the water's surface.   │
│                      │  │   Booms can also be used │
│                      │  │   with consideration     │
│                      │  │   given to length.       │
└──────────────────────┘  └──────────────────────────┘
              │                    │
              └──────────┬─────────┘
                         ▼
            ┌──────────────────────────┐
            │ Recover oil and undertake │
            │   appropriate clean-up    │
            │         action            │
            └──────────────────────────┘
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Containment and Recovery, continued

Containment to Recovery Process for Moving Water
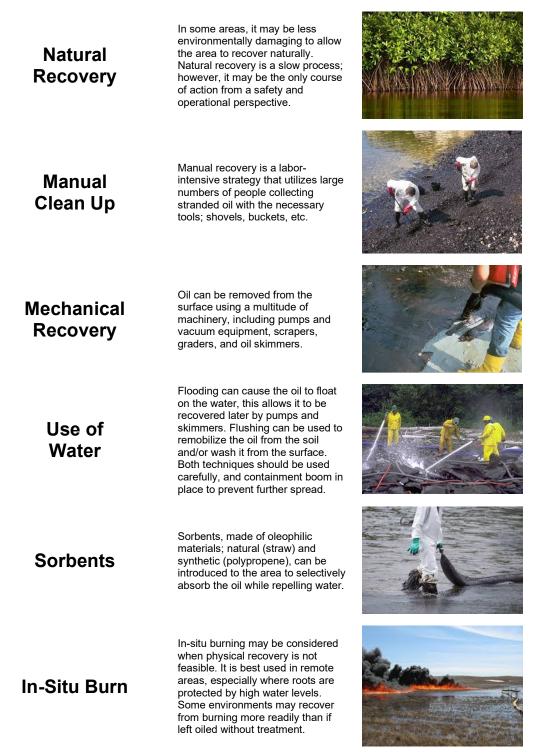
Booms can be used to direct the flow of oil, limit any further spread, and then contain it on the water's surface ready for recovery. Different techniques can be employed depending on the quantity of oil spilled and the surrounding operational and environmental conditions, such as the width and windings in the channel of a river, stream, or other watercourse.

If there are pre-determined control point tactical plans this will also guide the location, personnel and equipment required to implement the containment to recovery process.

1. CHOOSE AN ACCESSIBLE AREA TO CARRY OUT RECOVERY

- ❑ Position collection areas where there are natural collection points, or where water movement is slowest, such as the inside of the river bend, or where access allows.
- ❑ Ensure there is safe access for personnel and vehicles, including temporary storage areas.

2. IDENTIFY AND ANTICIPATE OPERATIONAL AND ENVIRONMENTAL CONDITIONS

- ❑ Estimate river speed and plan to deploy boom out at the correct angle.
- ❑ Use weather forecasts to predict future conditions.

DO NOT EXCEED THE MAXIMUM ANGLE FOR THE CURRENT. SEE GRAPH ON BOOMING TECHNIQUE

CONDUCT RECOVERY OPERATIONS

PLAN BOOM DEPLOYMENT METHOD

4. DEPLOY BOOM AND ANCILLARY EQUIPMENT

- ❑ Deploy booms to deflect oil from the fast side to the slow side of the river and into the collection areas.
- ❑ Deploy booms to deflect oil from the fast side to the slow side of the river and into the collection areas.
- ❑ Deploy backup deflector and containment booms to ensure all oil is collected.
- ❑ Ensure distance between booms are sufficient to allow for oil resurfacing.

3. PREPARE BOOM CONTAINMENT EQUIPMENT

- ❑ Draw out booming plans
- ❑ Lay out booms ready to deploy upstream of the planned position.
- ❑ In currents of more than 1 m/s^{-1}, shorter lengths of booms should be used to provide more anchor points at the connections.
- ❑ Identify anchorage points in the river or on the banks.
- ❑ Prepare boom ancillaries and moorings.

Containment and Recovery, continued

Recovery of Spilled Product

A range of response strategies are available to the responder, dependent on resources accessibility. Each strategy will require a level of expertise, coordination and is likely to generate waste. These factors should also be considered when deciding on the most appropriate clean-up method to use.

Natural Recovery

In some areas, it may be less environmentally damaging to allow the area to recover naturally. Natural recovery is a slow process; however, it may be the only course of action from a safety and operational perspective.

Manual Clean Up

Manual recovery is a labor-intensive strategy that utilizes large numbers of people collecting stranded oil with the necessary tools; shovels, buckets, etc.

Mechanical Recovery

Oil can be removed from the surface using a multitude of machinery, including pumps and vacuum equipment, scrapers, graders, and oil skimmers.

Use of Water

Flooding can cause the oil to float on the water, this allows it to be recovered later by pumps and skimmers. Flushing can be used to remobilize the oil from the soil and/or wash it from the surface. Both techniques should be used carefully, and containment boom in place to prevent further spread.

Sorbents

Sorbents, made of oleophilic materials; natural (straw) and synthetic (polypropene), can be introduced to the area to selectively absorb the oil while repelling water.

In-Situ Burn

In-situ burning may be considered when physical recovery is not feasible. It is best used in remote areas, especially where roots are protected by high water levels. Some environments may recover from burning more readily than if left oiled without treatment.

Containment and Recovery, continued

Recovery Techniques

Technique	Description	Equipment / Resources	Applicability	Environmental Impacts
Manual Clean Up	Hand tool (scrapers, wire brushes, shovels, cutting tools, wheelbarrows, etc.) are used to scrape oil off surfaces or recover oiled sediments, vegetation, or debris where oil conditions are light or sporadic and/ or access is limited.	• Shovels • Buckets • Sorbents • (10-20) labourers	• Can be used on all habitat types • Light to moderate oiling conditions for stranded oil or heavy oils that have formed semi-solid to solid masses • In areas where roosting or birthing animals cannot or should not be disturbed.	• Sediment disturbance and erosion potential.
Mechanical Removal	Mechanical earthmoving equipment is used to remove oiled sediments and debris from heavily impacted areas with suitable access.	• Motor grader, • Backhoe • Dump truck • Elevating scrapers • (2-4) labourers • Equipment operators	• On land, wherever surface sediments are accessible to heavy equipment • Large amounts of oiled materials.	• Removes upper 5 to 30 cm of sediments.
Sorbent Use	Sorbents are applied manually to oil accumulations, coatings, sheens, etc. to remove and recover the oil.	• Hand tools • Sorbents • (2-10) labourers	• Can be used on all habitat types • Free-floating oil close to shore or stranded on shore, secondary treatment method after gross oil removal • Sensitive areas where access is restricted.	• Sediment disturbance and erosion potential • Trampling of vegetation and organisms • Foot traffic can work oil deeper into soft sediments.
Vacuum / Pumps / Skimmers	Pumps, vacuum trucks, skimmers are used to remove oil accumulations from land or relatively thick floating layers from the water.	• (1-2) - 50 to 100-bbl vacuum trucks w/ hoses • (1-2) nozzle screens or skimmer heads • (2-6) labourers • truck operators	• Can be used on all habitat types • Stranded oil on the substrate • Shoreline access points.	• Typically, does not remove all oil • Can remove some surface organisms, sediments, and vegetation.
Flooding	High volumes of water at low pressure are used to flood the oiled area to float oil off and out of sediments and back into the water or to a containment area where it can be recovered. Frequently used with flushing.	• (1-5) - 380- to 750-lpm pumping systems • (1) - 100-ft perforated header hose per system • (1-2) - 200-ft containment booms per system • (1) oil recovery device per system • (6-8) labourers per system	• All shoreline types except steep intertidal areas • Heavily oiled areas where the oil is still fluid and adheres loosely to the substrate • Where oil has penetrated gravel sediments • Used with other washing techniques.	• Can impact clean down gradient areas • Can displace some surface organisms if present • Sediments transported into water can affect water quality.

Containment and Recovery, continued

Technique	Description	Equipment / Resources	Applicability	Environmental Impacts
Flushing	Water streams at low to moderate pressure, and possibly elevated temperatures, are used to remove oil from surface or near-surface sediments through agitation and direct contact. Oil is flushed back into the water or a collection point for subsequent recovery. May also be used to flush out oil trapped by shoreline or aquatic vegetation.	• (1-5) - 189- to 380-lpm / 689 kpa pumping systems with manifold • (1-4) - 30 m hoses and nozzles per system • (1-2) - 60 m containment booms per system • (1) oil recovery device per system • (8-10) labourers per system	• Substrates, riprap, and solid man-made structures • Oil stranded onshore • Floating oil in shallow areas.	• Can impact clean down gradient areas • Will displace many surface organisms if present • Sediments transported into water can affect water quality • Hot water can be lethal to many organisms • Can increase oil penetration depth.
High Pressure Washing	High pressure water streams are used to remove oil coatings from hard surfaces in small areas where flushing is ineffective. Oil is directed back into water or collection point for subsequent recovery.	• (1-5) - 1,200- to 4,000-psi units with hose and spray wand • (1-2) - 30 m containment booms per unit • (1) oil recovery device per unit • (2-4) labourers per unit	• Bedrock, man-made structures, and gravel substrates • When low-pressure flushing is not effective • Directed water jet can remove oil from hard-to-reach sites.	• Will remove most organisms if present • Can damage surface being cleaned • Can affect clean down gradient or nearby areas.
Sediment Tilling	Mechanical equipment or hand tools are used to till lightly to moderately oiled surface sediments to maximize natural degradation processes.	• (1) tractor fitted with tines, dicer, ripper blades, etc., or • (1-4) rototillers • hand tools • (2-10) labourers	• Any sedimentary substrate that can support heavy equipment • Sand and gravel beaches with subsurface oil • Where sediment is stained or lightly oiled • Were oil is stranded above normal high waterline.	• Significant amounts of oil can remain on the shoreline for extended periods of time • Disturbs surface sediments and organisms.
Log / Debris Burning	Oiled logs, driftwood, vegetation, and debris are burned to minimize material handling and disposal requirements. Material should be stacked in tall piles and fans used to ensure a hot, clean burn.	• (1) set of fire control equipment • (2-4) fans • (1) supply of combustion promoter • (2-4) labourers	• On most habitats except dry muddy substrates where heat may impact the biological productivity of the habitat • Where heavily oiled items are difficult or impossible to move • Many potential applications on ice.	• Heat may impact local near-surface organisms • Substantial smoke may be generated • Heat may impact adjacent vegetation.
Natural Recovery	No action is taken, and oil is allowed to degrade naturally	• None required	• All habitat types • When natural removal rates are fast • Oiling is light • Access is severely restricted or dangerous to cleanup crews • When cleanup actions will do more harm than natural removal.	• Oil may persist for significant periods of time • Remobilized oil or sheens may impact other areas • Higher probability of impacting wildlife.

SORBENTS

Sorbents can be used to recover oil product that can not be easily recovered using mechanical methods. They are predominately single-use products. When allowed to come in contact with oil on water, they will absorb or adsorb the oil over time.

An H2Safety Product

Objectives

◊   Prevent further migration of released products.

◊   Recover released product in areas that it may be difficult to reach.

Safety

◊   Identify hazards and complete a site safety plan.

◊   Consider toxic and flammable vapours.

◊   Adjacent infrastructure such as powerlines, pipelines, and underground services.

◊   Waders, safety harness, line and PDF may be required.

Environmental Consideration

◊   Utilize existing access and routes to minimize disturbance of soils. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.

◊   Ensure decontamination areas have been established to minimize transfer of released product during site assessment and site preparation activities.

◊   Consider air quality issues and proximity of stakeholders.

Equipment / Resources

◊   Sorbents

◊   Waste disposal bags

◊   Gloves

Personnel

◊   Supervisor / lead

◊   Site safety

◊   Labourers

Procedure
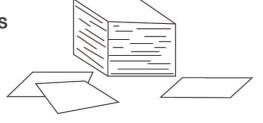
◊   Use sorbents to soak up and recover released product.

◊   Place used sorbents in waste bags for off-site disposal.
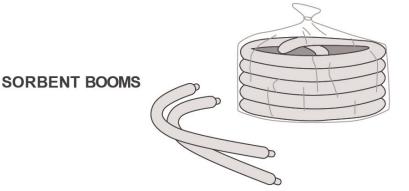
SORBENT PADS

Sorbent Pads

◊ Generally smaller in size. Useful for spot cleaning by hand.

Sorbent Booms

◊ Sorbent booms are easily deployed in low current environments.

◊ Usually sausage-shaped, with a few inches of height above the water when floating.

SORBENT BOOMS
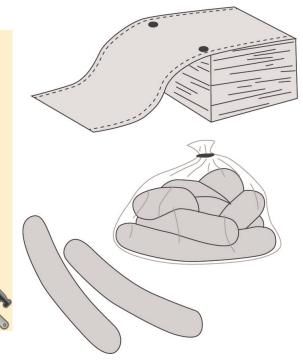
Sorbent Sweeps

◊ Long, narrow sheets of sorbent material with an integral tension member.

◊ Sorbent sweeps can be used in place of sorbent booms for managing and recovering sheens.
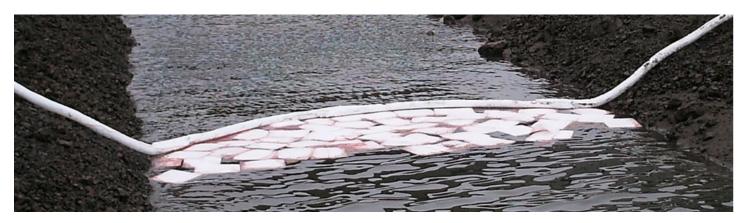
Sorbent Socks

◊ A smaller, more compact version of sorbent booms.

◊ Useful for building small containment walls around storm drains, sumps, bilges or sewer entries.

SORBENT SWEEPS

SORBENT SOCKS

BERMS

Berms can be constructed using any non-porous material using mechanical or hand equipment. They can be used to prevent migration of released product as well as used to divert surface flow from areas that have been impacted by a spill. They are used in conjunction with other containment and recovery methods such as trenches, bell holes and inverted weirs.

Objectives

◊ To halt the advance of spilled product and allow for the recovery of the spilled product.

◊ Contain and prevent further migration of released products by channeling the spill in a particular direction

◊ Create a pooled area for recovery of released product.

◊ Diversion of surface flows from impacted area.

Safety

◊ Identify hazards and complete a site safety plan.

◊ Consider toxic and flammable vapours.

◊ Adjacent infrastructure such as powerlines, pipelines, and underground services.

◊ Establish communications in remote areas.

◊ Be cautious of wildlife.

Environmental Consideration

◊ Utilize existing access and routes to minimize disturbance of soils. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.

◊ If possible, remove and conserve topsoil for reclamation activities. Avoid constructing berms with topsoil material.

◊ Ensure decontamination areas have been established to minimize transfer of released product during construction of berm.

◊ Handle and dispose of contaminated wastes in an approved manner.

Equipment / Resources

◊ Shovels and/or earth moving equipment

◊ Plastic sheeting

◊ Sorbents

◊ Vacuum truck / portable vacuum unit

Personnel

◊ Supervisor / lead

◊ Site safety

◊ Labourers
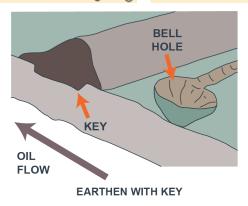
◊ Vacuum truck operator
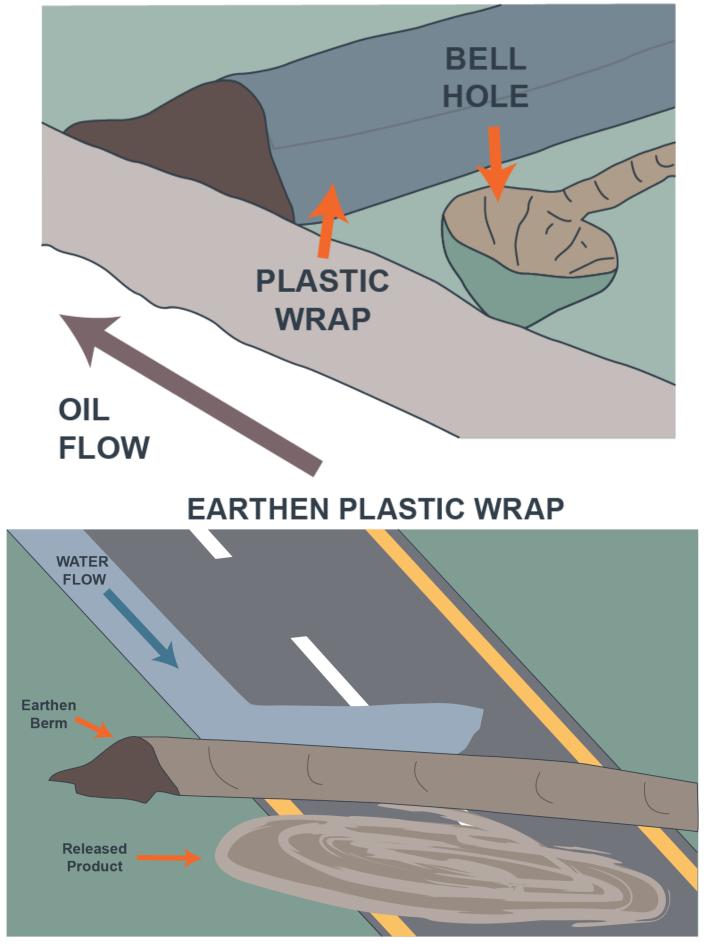
Procedure

◊ Lay plastic on ground, across expected route of spill travel.

◊ Pile non-porous materials on downstream side of plastic (away from approaching oil).

◊ Flip upstream side of plastic sheet over berm to prevent contamination of berm contents.

◊ Hand dig small bell hole upstream of berm recovery.

◊ Ensure waste disposal bags and tags if sorbents are to be used.

BELL HOLE

KEY

OIL FLOW

EARTHEN WITH KEY

BELL
HOLE

PLASTIC
WRAP

OIL
FLOW

EARTHEN PLASTIC WRAP

WATER
FLOW

Earthen
Berm

Released
Product

SURFACE FLOW DIVERSION

TRENCHES AND BELL HOLES

An H2Safety Product

Trenches can be excavated to contain a spill and used most commonly with bell holes to allow recovery of fluids and released product via vacuum unit or transfer pumps. For additional containment, the materials excavated from the trench can be used to construct berms downgradient of the trench. For larger spills, skimmers can be considered for recovery of released products.

Objectives

◊ To halt the advance of the spilled product and allow for recovery while reducing potential for environmental damage.

◊ Provide capacity to recover released product and ensure containment.

◊ To stop spilled product where a significant containment capacity is required on a slope.

Safety

◊ Identify hazards and complete a site safety plan.

◊ Consider toxic and flammable vapours.

◊ Adjacent infrastructure such as powerlines, pipelines, and underground services.

◊ Consider ground disturbance requirements.

Environmental Consideration

◊ Utilize existing access and routes to minimize disturbance of soils. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.

◊ Utilize low lying areas to minimize depth of excavations.

◊ Keep trench depth at a minimum to prevent further sub-surface or groundwater impacts.

◊ Stockpile clean materials for reclaiming area of trenches and bell holes.

◊ Ensure decontamination areas have been established to minimize transfer of released product during construction of trenches and bell holes.

Equipment / Resources

◊ Shovels / earth moving equipment
◊ Plastic sheeting
◊ Vacuum truck / vacuum unit
◊ Transfer pump / skimmer
◊ Temporary storage
◊ Containment booms
◊ Sorbents
◊ Hand lines

Procedure
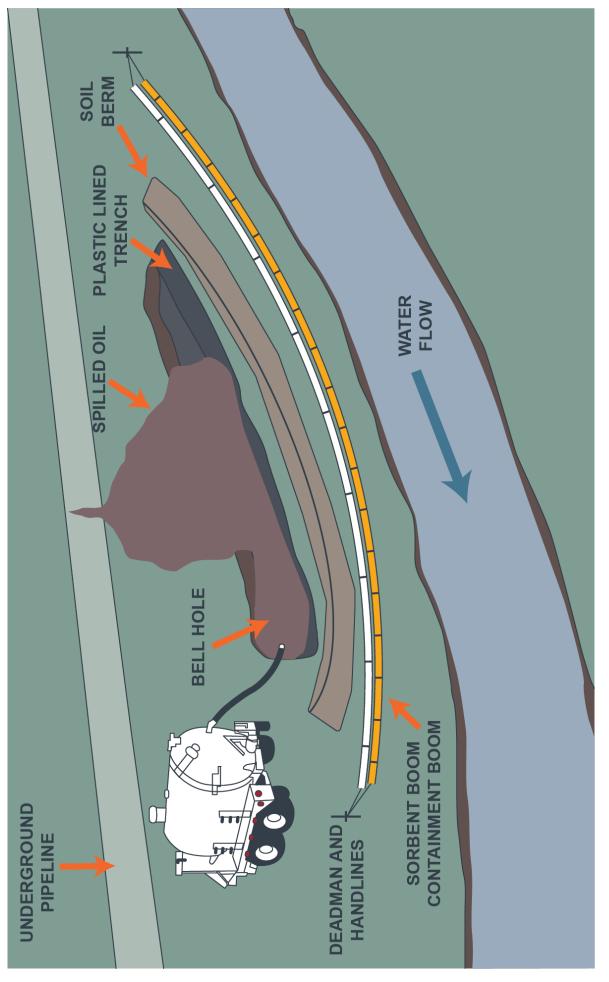
◊ Excavate shallow trench downstream and ensure berm is on downstream side of trench. Line the trench and berm with plastic sheeting to prevent contamination of berm contents.

◊ Excavate bell hole at low end of trench for the collection of fluids.

◊ Recover collected fluids using vacuum truck / vacuum unit or transfer pump into temporary storage.

Personnel

◊ Supervisor / Lead
◊ Site Safety
◊ Labourers
◊ Vacuum truck operator

UNDERGROUND PIPELINE

SOIL BERM

PLASTIC LINED TRENCH

SPILLED OIL

BELL HOLE

WATER FLOW

DEADMAN AND HANDLINES

SORBENT BOOM
CONTAINMENT BOOM

TRENCH AND BELL HOLE

AQUADAM

Aquadam's are made up of multiple parallel chambers called fill tubes which give it a level of stability against shifting. While slightly more complicated to place and fill than a simple bladder, in many cases it does not require external anchors. Use in slow moving shallow watercourses.

Objectives

◊ Contain and facilitate recovery of a water-borne spill from a ditch, creek or stream.

◊ Contain and prevent further migration of released products.

◊ Provide capacity to recover released product and impacted fluids.

Safety

◊ Identify hazards and complete site safety plan.

◊ Consider toxic and flammable vapours.

◊ Adjacent infrastructure such as powerlines, pipelines, and underground services.

◊ Establish communications in remote areas.

◊ Be cautious of wildlife.

Environmental Consideration

◊ Maintain control of damming materials to avoid introducing foreign substances into the watercourse.

◊ Utilize existing access routes to minimize disturbance of soils and care should be taken to minimize disturbance of watercourse and banks. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.

◊ Ensure decontamination areas have been established to minimize transfer of released product during setup.

◊ Handle and dispose of contaminated wastes in an approved manner.

Equipment / Resources

◊ Aquadam / water bags

◊ Water source

◊ Trash pump / hose

◊ Suction hose

◊ Vacuum unit

◊ Skimmer

Personnel

◊ Supervisor / lead

◊ Site Safety

◊ Labourers

◊ Vacuum truck operator
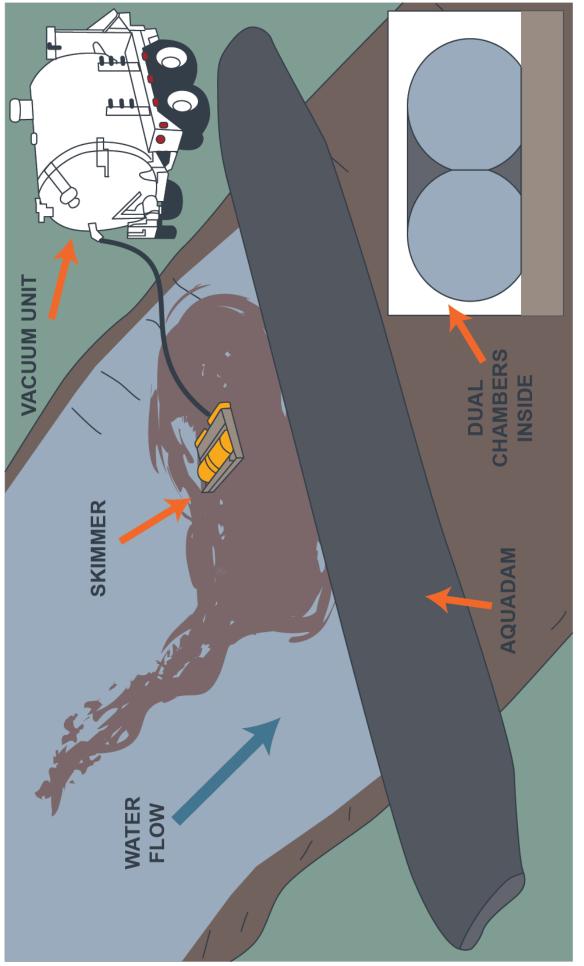
Procedure

◊ Set up trash pump/hose.

◊ Prepare area by removing any sharp debris that could puncture or damage the aquadam.

◊ Unroll aquadam across the area of desired containment.

◊ Fill aquadam using trash pump and hose.

◊ Recover released product using skimmer / vac unit.

VACUUM UNIT

SKIMMER

WATER FLOW

DUAL CHAMBERS INSIDE

AQUADAM

AQUADAM

CULVERT BLOCK

Culverts that allow a watercourse to pass under or through obstacles present an opportunity for controlling the spread of oil. If water flows are sufficiently low, they can be blocked entirely with boards or plywood to contain oil above the culvert. In higher flow situations, partial culvert blocks can be installed to create underflow dams.

Objectives

◊ Contain and prevent further migration of released products using sandbags / plywood.

◊ Create pooled area to allow recover of released product.

Safety

◊ Identify hazards and complete a site safety plan.

◊ Consider toxic and flammable vapours.

◊ Adjacent infrastructure such as powerlines, pipelines, and underground services.

◊ Establish communications in remote areas.

Environmental Consideration

◊ Utilize existing access and routes to minimize disturbance of soils. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.

◊ Ensure decontamination areas have been established to minimize transfer of released product during site assessment and site preparation activities.

◊ Consider air quality issues and proximity of stakeholders.

◊ Manage board level to allow water to pass through culvert, reducing flooding upstream and maintain downstream flow.

Equipment / Resources

◊ Track hoe
◊ Sorbents
◊ Shovels
◊ Earthen materials or sandbags
◊ Vacuum truck / portable vacuum unit
◊ Skimmer
◊ Temporary storage
◊ Plywood, stakes, nails
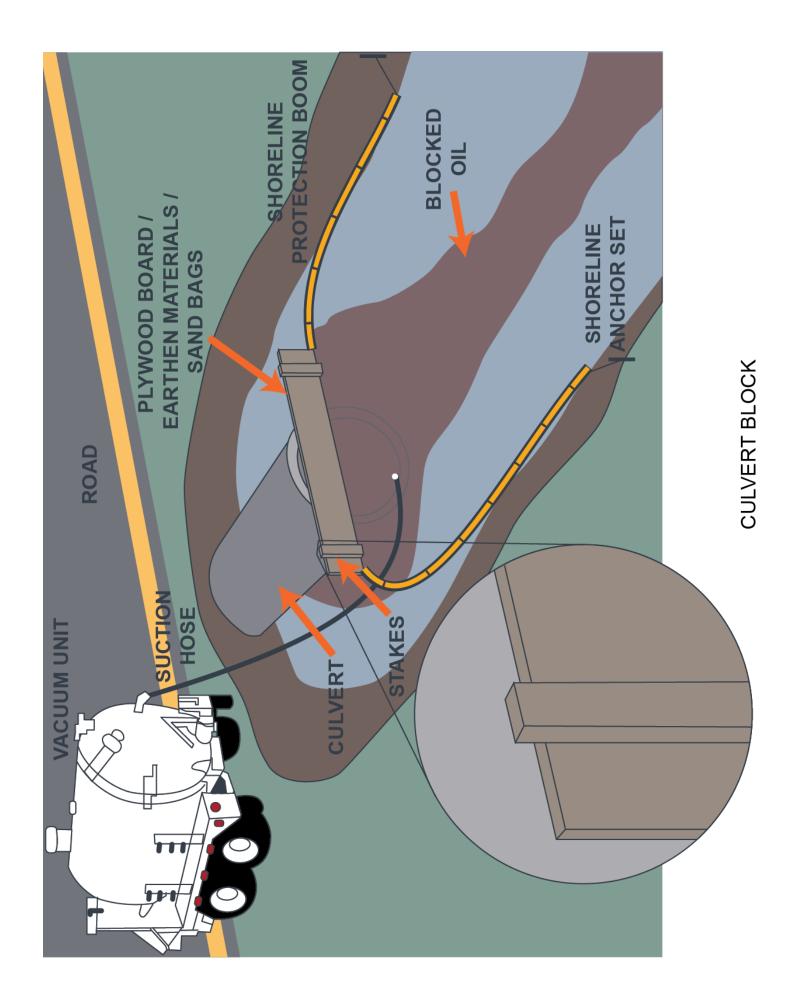
Personnel

◊ Track hoe operator
◊ Vacuum operator
◊ Supervisor / lead
◊ Site safety
◊ Labourers

Procedure

◊ Using earthen materials or sandbags, completely block the culvert or,

◊ Using plywood on upstream side of culvert. Secure in place with two stakes driven into bed of ditch, creek or stream. Raise board enough to allow passage of water under the board's lower edge. Secure in place with driving nails through stakes into the plywood.

◊ Monitor water levels to ensure sufficient flow and to prevent washouts.

◊ Utilize vacuum unit or skimmer to recover pooled fluids and dispose at appropriate location.

◊ Utilize containment boom to protect banks from oil impacts.

VACUUM UNIT

ROAD

SUCTION HOSE

PLYWOOD BOARD / EARTHEN MATERIALS / SAND BAGS

SHORELINE PROTECTION BOOM

BLOCKED OIL

SHORELINE ANCHOR SET

CULVERT

STAKES

CULVERT BLOCK

BOOM DEPLOYMENT

Larger watercourses are those where any combination of water depth, river or stream width, or current velocity would make the installation of bottom-founded or rigid fixtures impractical. The tactics that follow rely on the installation of flexible, floating barriers to redirect or divert surface contaminants.

An **H2Safety** Product

Objectives

◊ Divert surface contaminants from sensitive resources.

◊ Divert surface contaminants to areas of quiet water where velocities are slower and contaminants may be collected.

Floating Containment Boom

◊ Identified by the overall height of the boom or by the diameter of the float and the depth of the skirt.

◊ Shallow shirts are advised for fast moving waters, because their reduced drag makes them easier to deploy and secure. Deeper skirts are advised where waves may be encountered.

Shore Seal Boom

◊ Provides an effective barrier to control the spread of oil in the critical region where water meets the shoreline.

◊ A floating barrier with integral water bags that provide an effective seal when grounded.

◊ A smaller tube is fitted into a larger tube. The larger outer tube is filled with water and the smaller inner tube is filled with air.

◊ Shore seal boom can adjust to fluctuating water levels.

AIR TUBE

WATER TUBE BALLAST

CONNECTOR

TOP TENSION CABLE

TOW BRIDLE

FOAM FLOAT

BALLAST CHAIN

Boom Property	Static Water	Moving Water
Overall height (in)	6 - 24	8 - 32
Minimum gross buoyancy to weight ratio	3:1	4:1
Minimum total tensile strength (lbs)	1,500	5,000

75°
1.4 kph
0.9 mph

60°
1.6 kph
1.0 mph

45°
2.0 kph
1.2 mph

30°
2.8 kph
1.7 mph

15°
5.4 kph
3.3 mph

WATER FLOW

Time in seconds stick travels 30 m (100 ft)	Current km/hr	Current mph	Current (metres per second)	Current (feet per second)	Boom angle (degrees to current)
216 108 72 54	0.5 1.0 1.5 2.0	0.31 0.62 0.93 1.25	0.14 0.28 0.42 0.56	0.46 0.92 1.38 1.84	30 degrees
43 36 31 27	2.5 3.0 3.5 4.0	1.5 1.9 2.2 2.5	0.69 0.83 0.97 1.11	2.26 2.72 3.18 3.60	20 degrees
24 22 18	4.5 5.0 6.0	2.8 3.1 3.7	1.25 1.39 1.67	4.10 4.56 5.48	15 degrees
15 14 12 11	7.0 8.0 9.0 10.0	4.3 5.0 5.6 6.2	1.94 2.22 2.50 2.78	6.36 7.28 8.20 9.12	10 degrees

Considerations

When determining the type of containment operation to be utilized on a watercourse, the following should be considered:

◊ The slower the current and deeper the water, the more effective the containment and recovery operations will be.

◊ Chose a location where the current is directed towards the recovery area.

◊ Consider access and staging when selecting a recovery location.

◊ On larger watercourses chose a location that is on the side as the spill.

◊ Boom should be a straight as possible to defect oil to recovery areas.

◊ Boom angle is critical for ongoing maintenance of containment and recovery operations.

◊ In faster moving water, consider additional containment boom downstream to capture any flow through.

◊ If not feasible to boom entire channel, select as site that will capture most of the released product and consider further downstream containment and recovery areas.

◊ Select boom anchoring methods considering the following:

  ◊ Shoreline Pins can be used on narrow slow-moving watercourses and installed along the banks and include drive pin, screw, wing pin anchors, trees, or large rocks.

  ◊ Trolley Line can be deployed across large, moderate to fast moving watercourses and can be used with split pulley to deploy and adjust the boom angle.

  ◊ Bridge Pier Bridle can be installed on large, moderate to fast moving watercourse with the use of workboats

  ◊ In-Stream anchors and chain sets can be deployed within the watercourse by workboat crews and include sarca, danforth and rake anchors.

  ◊ Boom Vane can be deployed from shore and utilizes the instream current and mooring lines to set boom angles.
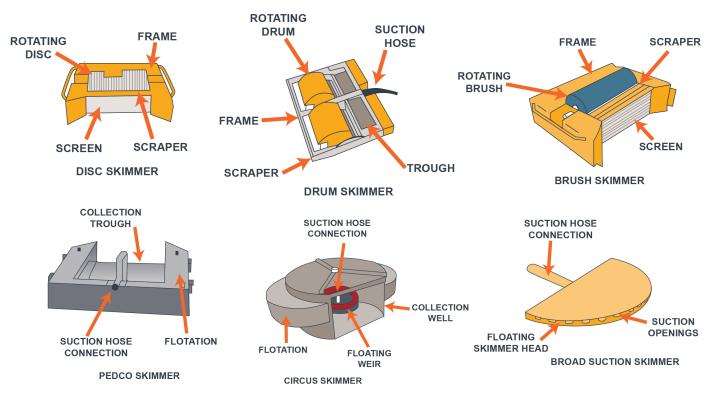
SKIMMERS, VACUUM UNITS, TEMPORARY STORAGE

An H2Safety Product

Recovery will involve the use of equipment as determined by plans and the scope of the incident.

Skimmers
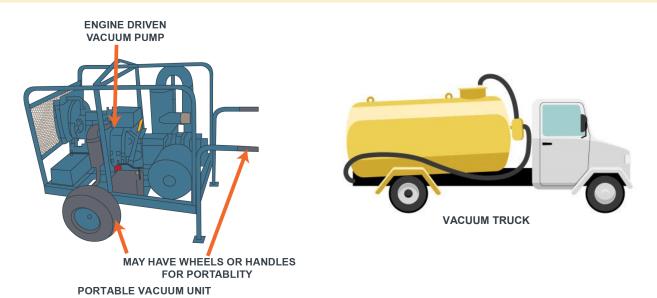
◊ Selective skimmers rely on oleophilic material that can be passed through the oil-interface. Selective skimmers collect a higher concentration of oil in the recovered fluid stream than non-selective skimmers.

◊ Non-selective skimmers are usually weir or suction devices that recover fluid indiscriminately.

Skimmer Type	Oil Type	Mode	Debris Tolerance	Wave Tolerance	Currents
Drum (selective)	Wide range of oil viscosities	Stationary	Debris must be managed to allow flow of oil to skimmer	Low sensitivity to waves with height less than diameter of drum	Not generally used in currents
Disc (selective)	Low to medium viscosity	Stationary	Debris must be managed to allow flow of oil to skimmer	Low sensitivity to waves with height less than diameter of disc	Not generally used in currents
Brush (selective)	Medium to high viscosity	May be operated in stationary mode if current is present	Effective in most forms of small debris	Low sensitivity to waves	May be operated in stationary mode if current is present
Pedco (non-selective)	Wide range of oil viscosities	Stationary	Debris must be managed to allow flow of oil to skimmer	Low sensitivity to waves	Used in currents typically river, streams and creeks
Circus (non-selective)	Wide range of oil viscosities	Stationary and advancing	Debris must be managed to allow flow of oil to skimmer	Good wave-following characteristics in nonbreaking waves	Used in currents typically river, streams and creeks
Broad Suction (non-selective)	Wide range of oil viscosities	Powered by vacuum or pump	Works around debris	Low sensitivity to waves	Static water conditions

DISC SKIMMER

DRUM SKIMMER

BRUSH SKIMMER

PEDCO SKIMMER

CIRCUS SKIMMER

BROAD SUCTION SKIMMER

Vacuum Units
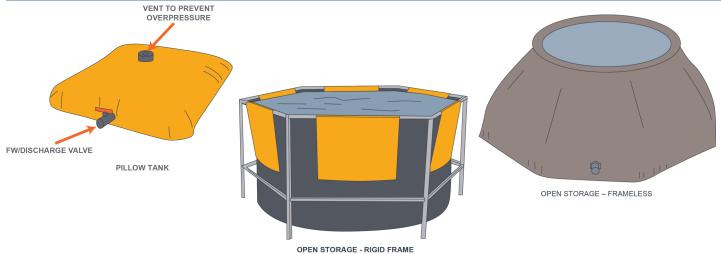
◊ Operate on the same principle as an industrial vacuum cleaner

◊ A suction pump pulls large quantities of air through a hose and into a large-volume receptacle. The sudden velocity drop that occurs in the receptacle causes liquids and solids to fall out of the airstream and collect. This process may be aided by internal baffles in the receptacle.

◊ May be used in place of pumps to operate pedco or broad suction skimmers or to transfer collected oil from disc or drum skimmers.

ENGINE DRIVEN VACUUM PUMP

MAY HAVE WHEELS OR HANDLES FOR PORTABLITY

PORTABLE VACUUM UNIT

VACUUM TRUCK

Temporary Storage

◊ Recovered oil can be critical to the success of a spill response. Temporary storage tanks are usually fabric, for storage and portability.

◊ Depending on the type, they may or may not have a rigid frame

◊ Note that open storage devices do not have positive vapor control. Hence, they may not be suitable for storage of highly volatile products.

Storage Type	Vapor Control	Capacity	Storage Length
Pillow Tank	Yes	750 - 19,000 L	Temporary and long-term
Open Storage - Rigid Frame	No	900 - 75,000 L	Temporary
Open Storage - Frameless	No	750 - 19,000 L	Teporary

VENT TO PREVENT OVERPRESSURE

FW/DISCHARGE VALVE

PILLOW TANK

OPEN STORAGE - RIGID FRAME

OPEN STORAGE – FRAMELESS

Post-Incident

Ensure all statements, event logs, forms and documentation on the incident remain securely stored following the incident. Records must be held for a minimum of 5 years as it may be requested by the regulatory agency at any point during that time.

Call Down Notification

After consultation with a senior company representative or the appropriate Regulatory Agency, Provincial Emergency Management or local County / Municipality, the Incident Commander will:

1. Give the "all clear" signal. Prior to the "all-clear" signal, the Incident Commander will confirm that all evacuated areas are safe to re-enter. This may involve such activities as:

   o Ensuring all equipment and locations are free of any pockets of fire, smoke and / or toxic gases.

   o Ensuring all equipment and debris are removed from offices and / or public areas.

   o Cordoning off the incident area to isolate any remaining hazards.

   o Checking low-lying areas and basements for contamination, if a toxic leak has occurred.

   After the "all-clear" message has been given, the Incident Commander will be responsible for:

   o Ensuring all evacuees are promptly notified once the call down is given.

   o Coordinating the return of any evacuees to the area. Ensure the public and employees receive any assistance they may require.

   o Maintaining security in any evacuated areas until the evacuees have returned and the businesses in the area have again become occupied.

2. Coordinate the deactivation of all emergency response operations, personnel, equipment and incident areas.

3. Ensure all previous contacts, including other companies; government agencies, etc. are notified of the emergency status call down.

4. Advise all response team members to document their call down notification calls.

5. Prepare and release an "all clear" statement to the media in conjunction with the Regulatory Agency.

6. Organize debriefing meetings for advisory personnel involved. In the case of incidents that have involved a death or serious injury, consult with Human Resources personnel about arranging critical incident counselling.

7. Notify and debrief Joint Interest Partners and Insurance company representatives.

Note: Ensure all statements, event logs, forms and documentation on the incident remain securely stored following the incident.

Public Care and Assistance

The decision to recall evacuees will be coordinated by the regulatory agency in consultation with other applicable government agencies and the licensee. Ensure the following tasks are completed as required:

1. Ensure all evacuees are promptly notified once the call down is given.

2. Coordinate the return of any evacuees to the area. Ensure the public and employees receive any assistance they may require.

Post Incident, continued

3. Maintain security in any evacuated areas until the evacuees have returned and the businesses in the area have again become occupied.

4. Ensure homes and businesses are ventilated and checked for gas pockets before allowing the occupants to enter. Rovers must check each room, office and public area. Post-Incident, continued

5. Ensure members of the Response Teams and other key participants in the emergency are debriefed as soon as possible.

6. Designate a senior company representative to act as the company Liaison with the public and other companies.

7. Ensure the affected employees and public are provided with post-incident company contact names and telephone numbers. If the emergency has impacted a large number of the public or has caused significant damage to private property or the environment, a temporary Public Relations Office should be established in the affected area.

8. Schedule a follow-up meeting with the public to clearly explain the cause of the incident and to address their concerns. Organize critical incident counselling as required.

9. Ensure public expense / damage claims have been collected and are processed in a timely manner.

Clean-up and Repair

If a serious injury or death has occurred, the scene must be left undisturbed, as much as possible, until an investigation of the site can be completed by the appropriate authorities.

Ensure the following tasks are completed as required:

- Ensure the incident site is not disturbed if there has been a fatality or a serious injury until police, regulatory officials, and company representatives complete necessary investigations.

- Ensure that site clean-up continues.

- Ensure that the correct procedures are developed and implemented for the decontamination of equipment and personnel.

- Ensure the On-Site Group Supervisor disposes of all hazardous waste according to applicable regulations (confer with the safety support personnel, the Response Team or other company safety personnel).

Note: The position of On-Site Group Supervisor during the remediation phase may be best filled by an Environmental Specialist.

- Ensure that priority is given to clearing debris and restoring the site to normal operating conditions after the government and company investigations are complete.

- Ensure that all safety equipment is demobilized, cleaned, and inspected for contamination.

- Ensure all roadblocks, staging area and detour equipment is demobilized.

- Ensure that all clean-up and repair actions follow the company's safety and environment policies and safe-work procedures.

Oil Spill Decontamination Procedures

All response personnel should be briefed on decontamination procedures before entering the Hot Zone. Basic decontamination procedures are described below. These steps may be utilized for most oil spill incidents.

Post Incident, continued

Basic decontamination steps and procedures include the following:

1. Establish and clearly identify the decontamination corridor. The best location for a decontamination station would be uphill from the hot zone, and upwind so that airborne contaminants blow back toward the hot zone. If the wind changes, the decontamination station may have to be relocated.

2. Close proximity to vital services (running water, electricity) is extremely beneficial for decontamination operations.

3. The decontamination zone should be accessible to emergency medical units.

4. Cover the entire decontamination corridor with plastic sheeting or tarps. Sorbents rolls should be used to line the decontamination corridor to reduce slippage and absorb oil.

5. Clearly identify the decontamination corridor using barrier tape, delineator posts and traffic cones. Place the delineator posts and traffic cones on the top of the plastic sheeting or tarps, and then attach barrier tape to these units to clearly mark the decontamination corridor.

6. Establish and clearly identify the point of entry from the Hot Zone into the Warm Zone and the exit corridor into the Cold zone.

7. Clearly identify, using barrier tape, delineator posts and traffic cones a clean (uphill) side and a dirty (downhill) side of the decontamination corridor. The clean side should be used to pass uncontaminated supplies and equipment into the Warm Zone, while the dirty side contains all the contaminated equipment and supplies used or removed during decontamination operations.

8. Water used during decontamination procedures must be carefully controlled and kept to a minimum. Water generated from decontamination procedures will always be treated as hazardous waste.

9. Establish an equipment drop zone at the edge of the Hot Zone for contaminated equipment. If required, this equipment may be re-used in the Hot Zone without decontaminating.

10. Disposable personal protective equipment that is heavily contaminated will be disposed of without decontaminating. Contaminated raingear, Tyvek suits, gloves etc. should be placed into garbage pails lined with 6-ml debris bags.

11. Establish a primary decontamination wash and rinse area as the first step near the Hot Zone to wash the most significant contamination off the PPE.

12. Establish a secondary decontamination wash and rinse area about 10 feet / 3 meters away from the first wash to assure thorough decontamination of PPE.

13. (Decontamination Solution) Any dish washing liquid, especially those with enhanced grease cutting properties diluted with water are acceptable as the decontamination solution for PPE.

14. Oiled sorbents and rags generated during decontamination procedures should be placed into garbage pails lined with 6ml debris bags.

15. Splash goggles must always be left on until decontamination procedures have been fully completed.

16. Establish an area to change respirator cartridges if required. Contaminated cartridges will be placed into 6ml debris bags that will be labeled and kept segregated from other waste for appropriate disposal.

17. Establish an area near the Cold Zone end of the decontamination corridor to remove rain suits, Tyvek suits, rubber boots and other items, that can be reused during spill response operations. These items will be further inspected before being reissued back into the field.

18. All used equipment and hand tools (pumps, rakes, shovels etc.) and other contaminated items should remain in the Decontamination Corridor until it can be determined if these items can be decontaminated.

Post Incident, continued

Third Party Investigations

The Incident Commander will coordinate and observe all site investigations. Third party investigators such as police, government agencies and insurance companies may be required to investigate an incident site. It is important to co-operate with third party investigators. However, company personnel should be aware of the corresponding corporate guidelines.

- Obtain the name, title, address and telephone number of all inspectors and immediately inform the Incident Commander before proceeding with the investigation.

- Ensure a company representative accompanies the inspector at all times. Never leave an inspector unattended.

- Give the inspectors the information they request, the facts only, no speculative information. Always tell the truth.

Document all items of evidence that the inspector has retained. Where possible, keep copies of the evidence provided to the Inspectors.

Wait until legal counsel is present before answering questions where the inspector indicates that any statements may be used as evidence or indicates that you have the right to counsel.

Review and Debriefing

The effectiveness of the ERP shall be reviewed after the end of the emergency. In some situations, a formal debriefing may be held. The objective of the debriefing should be to improve emergency preparedness and response by identifying areas of success and areas requiring improvement (a debriefing should not be a fault-finding mission). If one is held, all groups that responded to the emergency should be represented. The representatives should come prepared with complete details of their activities during the emergency and, where possible, provide supporting documentation. Common elements of an effective debriefing include:

a) A facilitator

b) A secretary to record the proceedings

c) A review of the sequence of events, including timing and actions taken; and

d) Identification of those portions of the ERP that were effective and those that require improvement

Action items identified during the debriefing should be documented and assigned with completion timelines, key lessons learned from emergency outcome should be shared with the appropriate parties, and the ERP should be revised as necessary. Separate debriefings may be held with different groups that participated in the emergency (e.g., emergency services organizations, the media, etc.).

Critical Incident Stress Debriefing (CISD)

Responders are often under a great deal of stress. They must act quickly, often in the face of pain and fear, to assess the situation, determine priorities and begin rescuing others who are in danger. They may have experienced a serious injury themselves or witnessed the death of co-workers or the public.

If necessary, the Incident Commander will request that the company's Human Resource personnel dispatch specially trained counselors to meet with responders, preferably within 24 to 48 hours, to provide support and reassurance to those affected by an emergency. Team members should include a mental health professional and trained peer support personnel (fire-fighters, paramedics, police, military, etc.).

Post Incident, continued

CISDs allow individuals to express the circumstances they were confronted with, how they felt at the incident and what their reactions were after the incident. The participants must understand that the meetings are strictly confidential and are not intended to judge or lay blame on an individual's actions. Recording devices and note taking should be prohibited.

Meetings should be limited to a maximum of 20 individuals. Individuals who are perceived to be responsible for the incident should be excluded from group meetings and met on a one-on-one basis.

These sessions provide the responders with a supportive environment that helps them deal with their emotions. It also provides them with information about stress and its effects (severe agitation, emotional upset, inability to sleep, etc.) and it educates them about stress management techniques.

Post-Incident / Accident Investigation

Once the emergency status has been removed, a senior company representative will appoint a subcommittee to investigate the event. This subcommittee will consist of appropriate management and technical specialists as required.

The objective of the investigation will be to analyze and evaluate the event in order to establish a cause, to provide advice on how to prevent a reoccurrence of the event, and to make recommendations on procedures that will improve the company's emergency response efforts in the future.

The post-incident / accident investigation should include:

- A review of the events leading up to the incident / accident.
- An analysis of the on-site remedial procedures, including an evaluation of the safety standards that were applied.
- An appraisal of the company's shelter-in-place / evacuation response for the affected public.
- An evaluation of the effectiveness of the notification and communication systems between the incident site and the head office, as well as within the company.
- An appraisal of the effectiveness of any media or public relations efforts.
- An assessment of any potential legal or environmental issues that may be raised as a result of the event or as a result of the company's response efforts.
- A summary of current and future costs.
- Completed appropriate event report forms and applicable attachments.
- An assessment of the strengths and weaknesses of the company's response.

This report will be directed to the attention of a senior company representative. It will be his / her responsibility to ensure all recommendations for improvements to the Corporate and Field Emergency Response Plans are incorporated where applicable and promptly communicated to the appropriate company personnel.

All documentation recorded during and following an emergency must be retained for up to five years in the event the Regulatory Agency requests it.
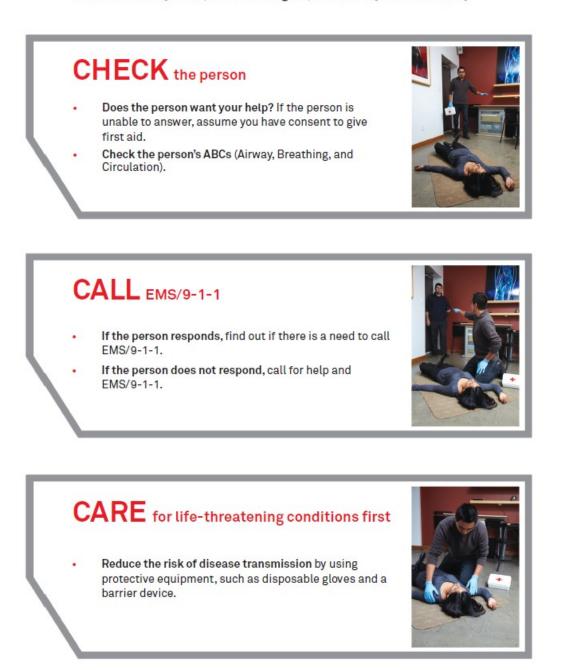
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Medical Emergencies

DISCLAIMER: The information contained in this section does not replace formal First Aid, CPR & AED training. The company makes no guarantee as to, and assumes no responsibility for, the correctness, sufficiency or completeness of such information or recommendations. A First Aid provider is someone who has completed formal first aid training from a recognized provider. Training can be obtained from the Canadian Red Cross (www.redcross.ca) or St. John Ambulance (www.sja.ca).

The 3 basic steps to follow in any emergency:

Remember: stay calm, look for dangers, never risk your own safety

CHECK the person

- Does the person want your help? If the person is unable to answer, assume you have consent to give first aid.
- Check the person's ABCs (Airway, Breathing, and Circulation).

CALL EMS/9-1-1

- If the person responds, find out if there is a need to call EMS/9-1-1.
- If the person does not respond, call for help and EMS/9-1-1.

CARE for life-threatening conditions first

- Reduce the risk of disease transmission by using protective equipment, such as disposable gloves and a barrier device.

Canadian Red Cross Check, Call, Care First Aid Poster. Retrieved March 2021, from Canadian Red Cross Web site: https://www.redcross.ca/crc/documents/fa_poster_checkcallcare_web.pdf

Medical Emergencies, continued

First Aid Information

CPR

The simplified Adult Basic Life Support algorithm includes five steps. The algorithm diagram provided by the American Heart Association emphasizes the following:

1. Assess the victim's responsiveness. If a victim is not breathing, or is not breathing normally (i.e., gasping), initiate CPR. Health care professionals should be trained to recognize cardiac arrest that presents as seizure-like activity or with agonal respirations.

2. Activate EMS (Emergency Medical Response) by calling 911.

3. Retrieve a defibrillator, usually an automatic external defibrillator (AED).

4. The algorithm proceeds in a loop of CPR and rhythm checks with defibrillation.

5. Check PULSE before chest compressions for at least five seconds and no more than ten seconds. If in doubt, begin compressions

6. CPR: push hard and fast. Begin chest compressions before ventilation. Chest compressions allow blood flow to the heart and brain. Delays in chest compressions result in diminished survival. Be sure to allow the chest to recoil between compressions. The chest should be compressed 100-120/min to a depth of 2"-2.4" (5-6cm)

7. For effective breathing, watch for chest rise and avoid excessive ventilation. 10 BREATHS should be delivered each minute, or one breath every six seconds. Each breath should be delivered over 1 second. Observe visible chest rise.

8. Avoid gastric inflation, as it may result in aspiration, pneumonia or vomiting.

9. The ratio of chest compressions to breaths is 30 to 2.

10. After the defibrillator becomes available, check rhythm. Use the AED when indicated and available. The victim should receive a shock that is repeated every two minutes or 5 cycles.

Burns

The American Red Cross recommends these steps to care for minor burns.

- Stop the burning. Put out the flames or remove the victim from the source of the burn.

- Cool the burn. Use large amounts of water to cool the burned area. DO NOT use ice or ice water other than on small superficial burns. Ice causes body heat loss. Use whatever resources are available: tub, shower or garden hose. You can apply soaked towels, sheets or other wet cloths to a burned face or other areas that cannot be immersed. Be sure to keep cloths cool by adding more water.

- Cover the burn. Use dry, sterile dressings or a clean cloth to cover a burn. Loosely bandage them in place. Covering the burn helps keep air out and reduces pain. Covering the burn also prevents infection. If the burn covers a large area of the body, cover it with clean, dry sheets or other cloth.

For minor burns and burns with open blisters that are not serious enough to need medical care, wash the areas with soap and water. Keep it clean. Put on an antibiotic ointment. Watch for signals of infection.

Medical Emergencies, continued

Burns, continued

Critical burns will need immediate medical attention. Call 911 or your emergency number if any one of the following instances occurs:

- Victim is having difficulty breathing.
- More than one part of the body is burned.
- There are burns to the head, neck, hands, feet or genitals.
- A child or an elderly person has been burned.
- Chemicals, electricity or explosions have caused the burns.

Chemical Exposure Guidelines

- In the event of chemical exposure, emergency services or poison control centre should be contacted as soon as possible.
- The eye may be irrigated using copious amounts of clean water, preferably using an eyewash bottle, eyewash station or shower.
- First aid providers may use continuous, large volumes of clean water for irrigation of chemical injuries where chemical exposure has occurred to other parts of the body.

Wounds & Abrasions Guidelines

- Superficial wounds and abrasions should be irrigated with clean water, preferably tap water because of the benefit of pressure.
- First aid providers may apply antibiotic ointment to skin abrasions and wounds to promote faster healing with less risk of infection.
- First aid providers may apply an occlusive dressing to wounds and abrasions with or without antibiotic ointment.
- The use of triple antibiotic ointment may be preferable to double- or singleagent antibiotic ointment or cream.
- If antibiotic is not used, antiseptic could be used.
- There is some evidence that traditional approaches, including applying honey, are beneficial and may be used on wounds by first aid providers.
- People with wounds that develop redness, warmth or become painful or with wounds where the person develops fever should seek assessment from a healthcare provider.

Medical Emergencies, continued

Bleeding Guidelines

- First aid providers must control external bleeding by applying direct pressure.

- The use of pressure points and elevation is NOT recommended.

- When direct pressure fails to control life-threatening external limb bleeding or is not possible (e.g. multiple injuries, inaccessible wounds, multiple casualties), tourniquets could be considered in special circumstances (such as disaster, war-like conditions, remote locations or in instances where specially trained first aid providers are providing care).

- Localized cold therapy with or without pressure may be beneficial in haemostasis for closed bleeding in extremities. Caution is advised when applying this recommendation to children due to a potential for hypothermia.

- The out-of-hospital application of a topical haemostatic agent to control lifethreatening bleeding not controlled by standard techniques and in situations where standard techniques could not be applied could be considered with appropriate training.

Source: www.redcross.ca/crc/documents/1303501_FirstAid-2016_Guidelines_LR-PDF.pdf

Medical Emergencies, continued

Next-of-Kin Notification

When an employee, contractor or member of the public is seriously injured, missing, or pronounced dead, the next-of-kin must be notified as promptly as possible. Keep in mind the following policies before notifying any next-of-kin:

- Death is never presumed, and first aid must be administered until relieved by a paramedic.

- No telephone or radio discussion is to take place regarding the name(s) of the injured.

- Notification is not to occur until the casualty has been pronounced dead by a medical doctor or medical examiner.

If an employee, contractor or member of the public is injured or killed as a result of company operations; notifications will be coordinated through local RCMP / municipal police and designated company personnel.

Before Notifying the Next-of-Kin

- Never release the names of the injured, missing, or persons pronounced dead before the next-of-kin are notified.

- Triple-check the identity of any casualty.

- If the casualty is conscious, document concerns. Do not make promises that cannot be kept.

- Confirm the casualty's relationship with the people being notified.

- Be prepared to support the next-of-kin. Provide assistance such as transportation, child care, alternative accommodation, reimbursements for daily expenses, and the temporary care of the family home if required.

During the Notification of the Next-of-Kin

- Make the notification in person, not by telephone or through an intermediary.

- Provide the relatives with as much information as possible; too few details can cause excessive worry. Present only the facts; do not speculate.

- Do not discuss personal views of liability or fault.

- Allow the next-of-kin to vent their emotions.

- Attempt to support and reunite families as quickly as possible.

- Offer assistance; document key issues and concerns. Do not make promises that cannot be kept. Follow up on relatives' requests.

- Document the details of anyone who appears to be having trouble coping with the incident so that he / she can be given prompt psychological support.

Medical Emergencies, continued
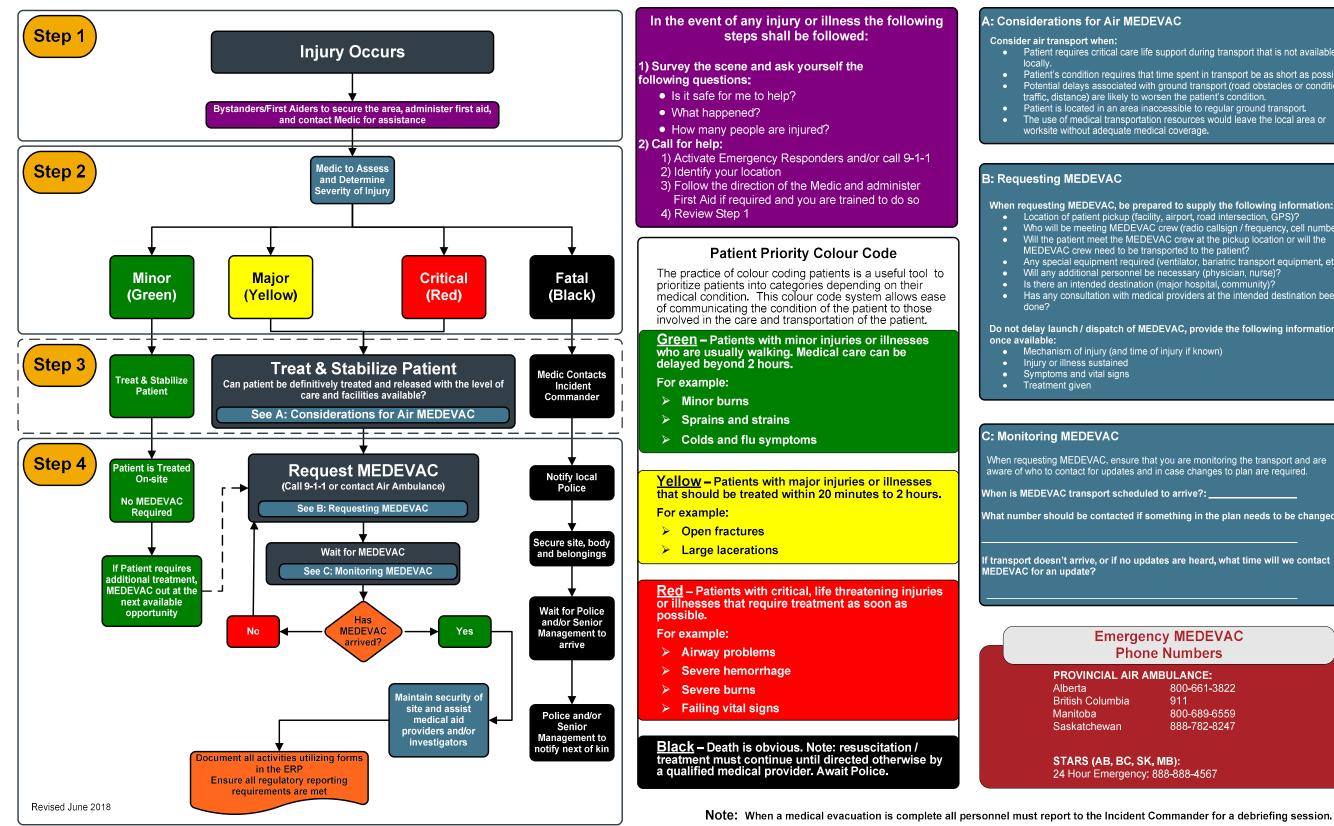
During the Notification of the Next-of-Kin, continued

- Do not leave the next-of-kin alone.

- Offer to contact a neighbour, friend, relative, minister, doctor, or counsellor.

- Leave your name and telephone number with family members.

- Ensure the next-of-kin are protected from media harassment as required.

Follow-Up

- The same representative who conducted the initial notification should continue to contact and support the next-of-kin.

- If required, a senior company representative will ensure that a trained psychologist conducts critical incident stress debriefing sessions with next-of-kin, friends and company employees involved or affected by the tragedy.

- Advise the employee's family that a senior company representative will be contacting them to discuss any immediate needs and to provide information on insurance coverage and benefits support. Follow up on this commitment.

Medical Evacuation (MEDEVAC) Procedure

Step 1

Injury Occurs

Bystanders/First Aiders to secure the area, administer first aid, and contact Medic for assistance

Step 2

Medic to Assess and Determine Severity of Injury

Minor (Green) | **Major (Yellow)** | **Critical (Red)** | **Fatal (Black)**

Step 3

Treat & Stabilize Patient

Treat & Stabilize Patient
Can patient be definitively treated and released with the level of care and facilities available?
See A: Considerations for Air MEDEVAC

Medic Contacts Incident Commander

Step 4

Patient is Treated On-site
No MEDEVAC Required

If Patient requires additional treatment, MEDEVAC out at the next available opportunity

Request MEDEVAC
(Call 9-1-1 or contact Air Ambulance)
See B: Requesting MEDEVAC

Wait for MEDEVAC
See C: Monitoring MEDEVAC

Notify local Police

Secure site, body and belongings

Wait for Police and/or Senior Management to arrive

Has MEDEVAC arrived? — No / Yes

Maintain security of site and assist medical aid providers and/or investigators

Police and/or Senior Management to notify next of kin

Document all activities utilizing forms in the ERP
Ensure all regulatory reporting requirements are met

Revised June 2018

In the event of any injury or illness the following steps shall be followed:

1) Survey the scene and ask yourself the following questions:
- Is it safe for me to help?
- What happened?
- How many people are injured?

2) Call for help:
  1) Activate Emergency Responders and/or call 9-1-1
  2) Identify your location
  3) Follow the direction of the Medic and administer First Aid if required and you are trained to do so
  4) Review Step 1

Patient Priority Colour Code

The practice of colour coding patients is a useful tool to prioritize patients into categories depending on their medical condition. This colour code system allows ease of communicating the condition of the patient to those involved in the care and transportation of the patient.

Green – Patients with minor injuries or illnesses who are usually walking. Medical care can be delayed beyond 2 hours.

For example:
- Minor burns
- Sprains and strains
- Colds and flu symptoms

Yellow – Patients with major injuries or illnesses that should be treated within 20 minutes to 2 hours.

For example:
- Open fractures
- Large lacerations

Red – Patients with critical, life threatening injuries or illnesses that require treatment as soon as possible.

For example:
- Airway problems
- Severe hemorrhage
- Severe burns
- Failing vital signs

Black – Death is obvious. Note: resuscitation / treatment must continue until directed otherwise by a qualified medical provider. Await Police.

A: Considerations for Air MEDEVAC

Consider air transport when:
- Patient requires critical care life support during transport that is not available locally.
- Patient's condition requires that time spent in transport be as short as possible.
- Potential delays associated with ground transport (road obstacles or conditions, traffic, distance) are likely to worsen the patient's condition.
- Patient is located in an area inaccessible to regular ground transport.
- The use of medical transportation resources would leave the local area or worksite without adequate medical coverage.

B: Requesting MEDEVAC

When requesting MEDEVAC, be prepared to supply the following information:
- Location of patient pickup (facility, airport, road intersection, GPS)?
- Who will be meeting MEDEVAC crew (radio callsign / frequency, cell number)?
- Will the patient meet the MEDEVAC crew at the pickup location or will the MEDEVAC crew need to be transported to the patient?
- Any special equipment required (ventilator, bariatric transport equipment, etc.)?
- Will any additional personnel be necessary (physician, nurse)?
- Is there an intended destination (major hospital, community)?
- Has any consultation with medical providers at the intended destination been done?

Do not delay launch / dispatch of MEDEVAC, provide the following information once available:
- Mechanism of injury (and time of injury if known)
- Injury or illness sustained
- Symptoms and vital signs
- Treatment given

C: Monitoring MEDEVAC

When requesting MEDEVAC, ensure that you are monitoring the transport and are aware of who to contact for updates and in case changes to plan are required.

When is MEDEVAC transport scheduled to arrive?: _____

What number should be contacted if something in the plan needs to be changed?
_____

If transport doesn't arrive, or if no updates are heard, what time will we contact MEDEVAC for an update?
_____

Emergency MEDEVAC Phone Numbers

PROVINCIAL AIR AMBULANCE:
Alberta   800-661-3822
British Columbia   911
Manitoba   800-689-6559
Saskatchewan   888-782-8247

STARS (AB, BC, SK, MB):
24 Hour Emergency: 888-888-4567

Note: When a medical evacuation is complete all personnel must report to the Incident Commander for a debriefing session.

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Responder Safety

Site Safety

Response personnel must stay out of the hazard area until the hazards are identified and assessed. All responders must evaluate potential site hazards including ignition sources or vapours gathering in low-lying areas such as ditches, trenches, and forested areas. The nature of a hazard will influence the responses. Therefore, the following characteristics about the hazard **must** be considered:

- The quantity and type of product involved.
- The potential for the situation to escalate.
- The location of the incident, the time of day and the weather conditions.
- Actual and perceived danger to responders, the public and the environment.
- The number of responders and their training.
- The availability of response equipment.
- The availability of external support, e.g. ambulances, police, fire fighters and mutual aid.

Responders **must** approach an incident site that may have gases or explosive vapours from an upwind or crosswind direction. They should inspect the site from a distance (using binoculars if possible) if hazards have not been assessed. When on-site, responders must take the following precautions:

- Identify safe escape routes away from hazardous areas.
- Continue to assess the related hazards, e.g. toxic vapours, fire or explosion hazards.
- Protect themselves and others (responders and public) before initiating control and containment operations.
- Do not allow anyone, including first responders such as police, fire fighters or ambulance attendants to enter the hazard area unless they are properly trained and equipped with personal protective equipment.
- Avoid extinguishing an ignited hydrocarbon release if the supply cannot be stopped.
- Only attempt fire control on small fires. Extensive fires or uncontrolled facility fires must be dealt with by external firefighting professionals. Responders must not attempt to battle a fire without adequate firefighting equipment, training, and backup personnel.
- Advise fire authorities when a company facility is threatened by an external fire. They should also be made aware of dangerous products or flammable hazards at the facility, such as pressurized NGL vessels, chemical and fuel storage.

Consider an outside expert when necessary. Well control, for example, is a specialty requiring specific experience, equipment, and procedures.

Responder Safety, continued

On-Site Work Areas

The On-Site Group Supervisor may choose to separate the site into three distinct areas to clearly identify the high-risk areas and to reduce the hazards to the on-site responders. The three areas could be defined as the safe area, the hazardous area, and the decontamination area.

Hazardous Area (Hot Zone)

Extreme caution and planning must be undertaken when entering the hazardous area. Access to and from the hazardous area will be controlled. Only personnel with appropriate personal protective equipment, training and an understanding of the specific response and control procedures will be allowed into the hazardous area. An example is confined space entry and rescue. Prior to entry into the hazardous area, all personnel should fully understand the goals, the method of on-site responder communication and the rescue plan.

The following guidelines help the On-Site Group Supervisor to determine the hazardous area. An area is considered hazardous if any of the following conditions exist:

- Combustible gas reading of 10% LEL or greater

- H_2S gas reading of 15 ppm or greater for 15 minutes

- SO_2 readings of 5 ppm or greater for 15 minutes

- Oxygen content of less than 19.5% or greater than 22%

- Presence of organic and inorganic vapours / gases and liquids (consult Safety Data Sheets (SDS) for toxicity data)

- An area the On-Site Group Supervisor deems to be hazardous, such as the area surrounding a fire or spill

The On-Site Group Supervisor will consider the following on-site conditions when determining the size of the hazardous area:

- The location of access routes, power lines, pipelines, fire, and explosion hazards

- Areas where vapours are likely to accumulate such a downwind areas, low areas, confined spaces

- Site stability, e.g. steep slopes, overhanging banks, unstable soil, thin ice

- Weather conditions

- The toxicity and evacuation data for the product involved (Refer to SDS)

Decontamination Area (Warm Zone)

Personnel responding to hazardous substance emergencies may become contaminated in several ways:

- Contacting vapours, gases, mists, or particulate in the air.

- Being splashed by materials while sampling or opening a container.

- Walking through puddles of liquids or on contaminated soil.

- Using contaminated instruments or equipment.

Responder Safety, continued
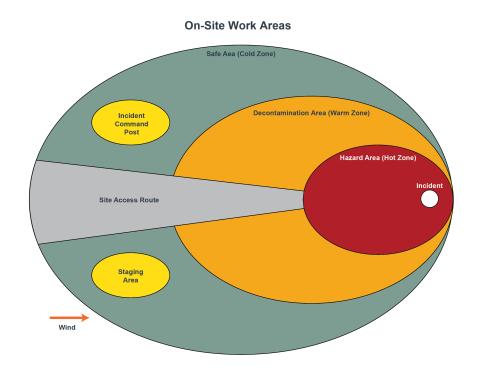
Decontamination is the complete or partial removal or neutralization of the harmful contamination chemicals. Some equipment will not withstand a proper decontamination process and therefore must be destroyed. Site safety personnel will recommend to the On-Site Group Supervisor whether clothing, instruments and equipment should be decontaminated or destroyed.

The decontamination area is usually set up in response to a hazardous material spill and when decontamination of personnel and equipment is required. The decontamination area buffers the designated hazardous and safe areas. Decontamination areas should be set up in areas that are not affected by the on-site hazard. Any contaminated personnel and equipment leaving the hazardous area must be decontaminated in the decontamination area before continuing to the safe area.

Equipment, solutions, and procedures required for decontamination depend on the type and degree of contamination. All hazardous waste must be disposed of according to applicable waste management regulations.

Safe Area (Cold Zone)

The safe area is an area verified by the On-Site Group Supervisor to be safe. The On-site Command Post (OSCP) is located in the safe area. The safe area must be continually monitored and evaluated to confirm its safety. If there is any concern about the area's safety, the On-site Command Post will relocate to an area proven to be safe.

On-Site Work Areas

Responder Safety, continued

Working Alone

A Working Alone Procedure and a working alone hazard assessment are legislated responsibilities of every employer. One working alone hazard assessment may fit multiple work sites providing the working conditions are the same. These assessments must be available for the workers to review. All working alone hazards shall be mitigated to a reasonable and practical level of risk. Every worker who works alone must have a designated "Working Alone Contact". Activities, dates, and times of contact shall be documented and filed. The "Working Alone Contact" may be a co-worker, a 24/7 facility control room, a third-party emergency answering service, or automated working alone tracking system.

Application

Each operating area will develop a Site-Specific Procedure (SSP) for Working Alone; the SSP will be documented, approved by management, and signed by every company employee or contract employee working in that operating area. Service suppliers will be expected to provide their own "Working Alone Programs" but due to communication limitations or emergency response capabilities they may need to utilize the company Working Alone Program, this temporary change of "Working Alone Contact" should be documented on the safe work permit.

Potential Hazards

- Loss of communication needed for requesting assistance;
- Delays in reporting times;
- Injury requiring assistance; and
- Transportation problems.

Equipment and Training Requirements

- The Working Alone Procedure and Response Plan for the overdue worker are to be a specific agenda item for safety meetings to ensure a suitable level of acceptance and involvement from all personnel is achieved, and
- Supervisors and members of the management shall discuss the plan with workers that participate in field activities, to ensure a high level of awareness and preparedness is maintained at all times.

Low Risk Working Alone Procedure

(Sweet Gas Operations, daylight hours, normal weather conditions)

- The employee should notify their "Working Alone Contact" of check-in times and locations of work;
- If multiple travel routes are an option, then the route selected will also be noted
- If an employee's arrival at a check-in location is delayed by more than one (1) hour, the employee should notify their "Working Alone Contact" of the new estimated time of arrival.

Responder Safety, continued

High Risk Working Alone Procedure

(Sour Gas Operations, Call-outs, Adverse Weather Conditions)

- The employee should notify their "Working Alone Contact" prior to departure, and advise them contact of the estimated time of arrival at location;

- The employee should notify their "Working Alone Contact" of arrival at location;

- The employee should assess the problem or job scope, notify their contact, discuss the nature of the problem or job, work procedure to be used, and any additional required safeguards, and provide an estimation of how long they will be at the location;

- The employee should notify their "Working Alone Contact" when they are finished and ready to leave the location and estimated time of arrival at next check point, base or home; and

- The employee should notify their "Working Alone Contact" of arrival at next checkpoint, base or home.

- If the employee is delayed or expects to be delayed arriving at their next check-in point by more than one (1) hour, the employee should notify their "Working Alone Contact" of amended estimated time of arrival.

- During adverse weather conditions the employee should notify their "Working Alone Contact" of the exact route to be followed; shorter check-in time intervals are recommended.

Note: Every worker has both the right and responsibility to refuse unsafe work.

Overdue Worker Response Plan

- The Overdue Worker Response Plan shall be initiated when a worker is one (1) hour overdue, (shorter grace periods may be instituted during bad weather or at high risk worksites), and

- After the one (1) hour grace period has expired, the worker's "Working Alone Contact" shall:
  - Attempt to contact the overdue worker by cell phone or radio; immediately notify the worker's supervisor of the circumstances;

- The supervisor will discuss options with the "Working Alone Contact" and together they will agree on an action plan; and

- The action plan may include any or all of the following:
  - Continue attempts to contact the overdue worker by cell phone or radio;
  - The "Working Alone Contact" or other designated individual will drive the route taken by the overdue worker in an attempt to contact the worker. Specific PPE safety equipment may be required for rescue activities by those involved with the Overdue Worker Response Plan;
  - The "Working Alone Contact" or the supervisor may request search assistance from industry workers in the area who have been identified in the contact list;
  - The "Working Alone Contact" or supervisor will call local hospital(s) to establish whether an injured person has been admitted; and
  - The "Working Alone Contact" or supervisor may notify the local police or RCMP of circumstances with a request for assistance.

Responder Safety, continued

Missing Persons

In the event that an employee should go missing:

- Confirm that the person has failed to check in at the predetermined time.

- Contact the person's supervisor (or next in line for reporting) and provide details, e.g. where the person was working, length of time overdue, and if the person is alone.

- If it is deemed appropriate to initiate a search, inform a supervisor (or next in line for reporting) of any plans before any employees head out to search.

- Employees should never endanger themselves during a rescue.

- Searchers should always use the buddy system and work in teams. Each team must be fully equipped, names logged, and their designated search area recorded on a map before heading out. Searchers should carry maps and compass, GPS (Global Positioning System) unit, survival kit, first aid kit, communication equipment, extra batteries, and appropriate provisions.

- Search first where the missing person will most likely be found, e.g. where the person's truck is parked.

- If the missing person is not found within a specified time (e.g. two hours), notify the appropriate Search and Rescue (SAR) authority and/or local police.

- When formal SAR groups are engaged, it is imperative that only one person coordinates all operations.

- Notify ALL authorities when the missing person is found so all search participants are informed and can cease their efforts.

- Complete and submit the required accident/incident investigation form.

Source: PDAC Field Safety Pocket Guide

Rest Periods
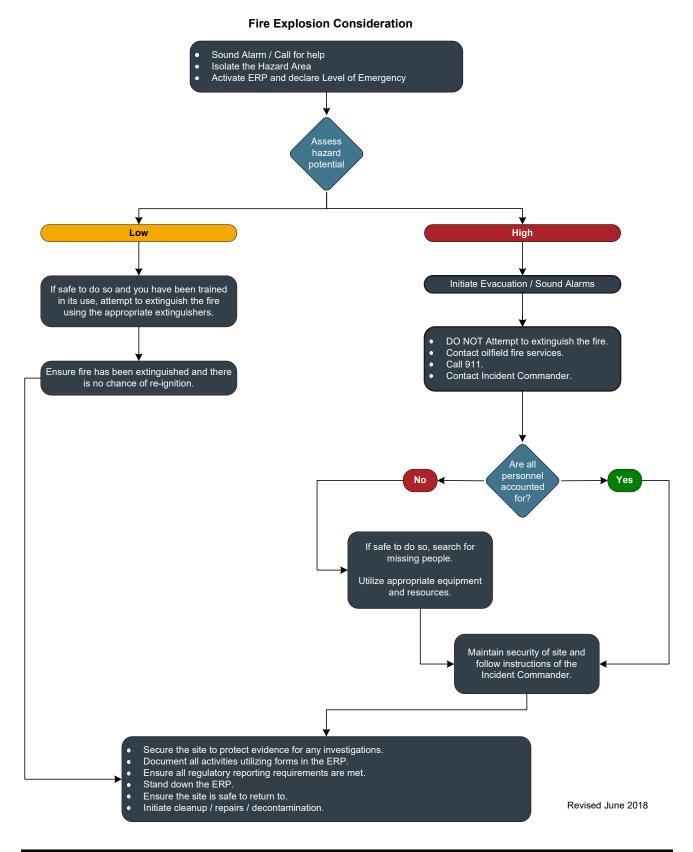
Response members may experience a wide array of stresses which may include the death or serious injury of a co-worker, witnessing distressing sights, time pressures, responsibility overload, physical demands, mental demands, emotional demands, limited resources and high expectations from others, hazardous environments or extreme weather conditions.

In high-stress assignments, responders should be routinely rotated. Where manpower is limited, responders should alternate from high-stress positions to lower-stress positions.

Fifteen-to-thirty-minute rest periods should be scheduled every two hours during an emergency situation for all responders; and if possible, provided with:

- Shelter from weather, dry clothes, and a place to sit or lie down away from the scene.

- Warm food, high protein snacks and juices.

- An opportunity to share their feelings with co-workers.

Fire / Explosion

Fire Explosion Consideration

- Sound Alarm / Call for help
- Isolate the Hazard Area
- Activate ERP and declare Level of Emergency

↓

Assess hazard potential

Low

If safe to do so and you have been trained in its use, attempt to extinguish the fire using the appropriate extinguishers.

↓

Ensure fire has been extinguished and there is no chance of re-ignition.

High

Initiate Evacuation / Sound Alarms

↓

- DO NOT Attempt to extinguish the fire.
- Contact oilfield fire services.
- Call 911.
- Contact Incident Commander.

↓

Are all personnel accounted for?

No → If safe to do so, search for missing people.

Utilize appropriate equipment and resources.

Yes

Maintain security of site and follow instructions of the Incident Commander.

↓

- Secure the site to protect evidence for any investigations.
- Document all activities utilizing forms in the ERP.
- Ensure all regulatory reporting requirements are met.
- Stand down the ERP.
- Ensure the site is safe to return to.
- Initiate cleanup / repairs / decontamination.

Revised June 2018

Fire / Explosion, continued

An explosion is a mechanical or chemical reaction that suddenly releases a large amount of energy, resulting in a shock or pressure wave that causes damage, high temperature and usually a release of gases. Explosions can be loosely categorized according to reaction time. High explosives react quickly within a millionth of a second, while low explosives react more slowly. Important general guidelines must be followed for all fires or explosions to ensure the safety of the public, employees and environment. When encountering different types of fire, the appropriate firefighting services should always be contacted. This is especially important for fuel-related, structure-related or forest-related fires to decrease the risk of major damage. For oil-related fires, industrial fire-fighters are the best equipped to reduce further danger in the area.

If a fire or explosion occurs, the following actions shall be taken:

Control / Containment:

- If possible;
  - Isolate the source and take reasonable action to extinguish or contain the fire.
  - Shut down all known fuel sources.
  - Shut off high voltage power supplies to equipment in fire-affected area.
  - Shut off fuel to heaters near to, or downwind of fire.
  - Dissipate static electrical charges on bodies of all personnel in area. Grounding may be accomplished by holding onto a metal structure for ten seconds with bare hands.
- Call out to industrial firefighting services.
- Notify the Incident Commander.
- Isolate hazard area or equipment as required.

External Notifications:

- Follow notification procedures for fires outlined in the Government Notification Matrix in **Section 5: External Agencies**.

Fire / Explosion, continued

Classification of Fires

Most fires that occur will fall into one or more of the following categories:

Class / Symbol	Material	Extinguishing Agent
A	Ordinary combustible materials, such as wood, paper, cloth, trash, and plastics.	Cooling, blanketing or wetting extinguishing agent is needed. Water and foam extinguishers work on this class of fire.
B	Flammable liquids such as gasoline, thinners, oil-based paints and greases; Also includes flammable gases such as propane and butane.	Extinguishers for this type of fire include carbon dioxide, dry chemical and halogenated or clean agent types.
C	Energized electrical equipment, such as motors transformers and appliances.	The most common type of extinguisher for this class is a carbon dioxide extinguisher. A dry chemical or clean agent extinguisher can also be used.
D	Combustible metals such as magnesium, sodium, potassium, titanium and aluminum.	Special dry powder extinguishing agents are required for this class of fire, and must be tailored to the specific hazardous metal.
K	Cooking oils and greases such as animal fats and vegetable fats.	A wet chemical fire extinguisher agent is used for this class of fire.

Source: www.femalifesafety.org

Fire / Explosion, continued

Response Actions Based on Type of Fire

Process Fire

Definition:

Process fires include those within or adjacent to: fractionation skids, compressors, exchangers, vessels (also see BLEVE / LPG), piping, tanks/bullets (also see BLEVE / LPG).

Hazards:

Process fires can be a particular hazard where flammable materials are present.

Response Actions:

Deny or restrict access to the area, shut down and depressurize any related or additional process equipment, if safe to do so. Do not attempt to extinguish a process fire if you are not properly trained.

Sulphur Fire

Definition:

Sulphur dust suspended in air ignites easily, and can cause an explosion in confined areas.

Hazards:

Toxic gases will form upon combustion. Bulk/solid forms burn only at a moderate rate, whereas dust burns with explosive violence. Burning sulphur decomposes into toxic sulphur oxide gases such as sulphur dioxide (SO_2) and hydrogen sulphide (H_2S) which is toxic if inhaled.

Response Actions:

The following precautions should be taken when dealing with sulphur fires:

- Prevent human contact or inhalation. Fire may produce irritating and/or toxic gases.
- Wear full faced, self-contained breathing apparatus and full protective clothing.
- Use a water fog, NOT water, to extinguish fire.
- Cool fire, surrounding area, and containers, tanks, and trucks to below 154°C in order to diminish the fire.
- Evacuate the area, except for essential personnel.
- Isolate the area with a 1600m radius.

Trained personnel, local fire departments or contract fire services should only attempt to control a sulphur fire. To ensure public protection, evacuate 1600 meters in all directions and ensure air monitoring is set up downwind of fire and the smoke plume. Continually assess evacuation zone based on air quality readings.

Fire / Explosion, continued

Electrical System Fire

Definition:

Electrical fires are fires involving potentially energized electrical equipment. This sort of fire may be caused by, for example, short-circuiting machinery or overloaded electrical cables.

Hazard:

Electrical fires can quickly get out of control and can cause serious damage and threaten lives.

Response Actions:

Electrical fire may be fought in the same way as an ordinary combustible fire, but water, foam, and other conductive agents are not to be used. While the fire is, or could possibly be electrically energized, it can be fought with any extinguishing agent rated for electrical fire. Carbon dioxide CO_2, FM-200 and dry chemical powder extinguishers such as PKP and even baking soda are especially suited to extinguishing this sort of fire. Once electricity is shut off to the equipment involved, it will generally become an ordinary combustible fire. Water conducts electricity; throwing water on an electrical fire can cause the fire to get larger.

Grass Fire

Definition:

A grass fire is a fire that burns large amounts of grass. They mainly occur in grasslands and or Great Plains.

Hazards:

Grassfires spread rapidly, travelling at speeds of up to 25 km/hr, and can quickly threaten lives and properties.

Response Actions:

Threatening grass fires have a potential to involve the licensee's and other area operators' facilities, pipelines and well sites, therefore guidelines to minimize damage to any property need to be followed. To protect the licensee's and other area user property, it is important to follow these guidelines:

- Notify other area operators of the emergency.

- Isolate and shut in all affected facilities if safe to do so.

- For small grass fires extinguish using a shovel or ABC type fire extinguisher. If it enters coulees, along rivers, or into large areas of trees or forests, contact the local fire department and local forestry office for assistance.

- For larger grass fires do not attempt to extinguish, but contact local fire department and local forestry office.

Fire / Explosion, continued

Forest Fire / Wildfire

Definition:

A forest fire is an uncontrolled fire in a wooded area. A forest fire is a natural disaster consisting of a fire which destroys a forested area, and can be a great danger to people who live in forests as well as wildlife. Forest fires are generally started by lightning, but also by human negligence or arson, and can burn thousands of square kilometres.

Hazards:

Forest fires can quickly get out of control and can cause serious damage in agricultural and forested lands.

Response Actions:

- Notify other area operators of the emergency.

- Isolate and shut in all affected facilities if safe to do so.

- For small fires extinguish using a shovel or ABC type fire extinguisher. If it enters coulees, along rivers, or into large areas of trees or forests, contact the local fire department and local forestry office for assistance.

- For larger fires do not attempt to extinguish the fire. To report a forest fire/wildfire, call:

British Columbia	1-800-663-5555 (Prov-wide) or *5555 (from cell, Prov-wide)
Alberta	310-FIRE (3473) (Prov-wide)
Saskatchewan	1-800-667-9660 (Prov-wide)
Manitoba	1-800-782-0076 (Prov-wide)
Northwest Territories	1-877-NWT-FIRE (698-3473) (Prov-wide)

Fire / Explosion, continued

Natural Gas Liquid Fire

Definition:

Liquid natural gas is very flammable after vaporization to a gaseous phase.

Hazard:

If liquid natural gas is spilled, it vaporizes. The natural gas vapours are initially heavier than air and they form a cloud close to the ground, which is pushed downwind and eventually dissipates. If a viable ignition source is present where a vapour cloud exists at a 5%–15% concentration in air, the vapour cloud can ignite and burn. A vapour cloud, formed by an LNG spill, could drift downwind into populated areas. An LNG fire gives off a tremendous amount of heat. Water will react violently with the LNG and may cause the fire to flare up and intensify.

Response Actions:

A solid stream of water should never be used to extinguish this type because it can cause the fuel to scatter, spreading the flames. The most effective way to extinguish a liquid or gas fueled fire is by inhibiting the chemical chain reaction of the fire, which is done by dry chemical and Halon extinguishing agents, although smothering with CO_2 or, for liquids, foam is also effective.

BLEVE

Definition:

BLEVE is an acronym for Boiling Liquid Expanding Vapour Explosion. It is the term for an uncontrolled fire and explosion of vapour as it escapes from a ruptured vessel of pressurized / liquefied gas. Such explosions can be extremely hazardous.

Hazards:

The hazards associated with a BLEVE include the initial impact of the blast, the fireball and radiation from the explosion and projectiles (pieces of the tank and nearby equipment) that are rocketed from the explosion.

Response Actions:

- Contact Emergency Response Assistance Canada (ERAC) for assistance with emptying any damaged tanks.
    - o Under the plan, response is provided for the following chemicals: LPG - UN 1075, Propane - UN 1978, Butane - UN 1011, Propylene - UN 1077, Butylene - UN 1012, Isobutane - UN 1969, Isobutylene - UN 1055, Butadiene-1,3 - UN 1010

- If safe to do so, attempt to extinguish any fires before they come in contact with any storage bullets.

- Call 911 to obtain assistance with fire suppression. Ensure all responders are made aware of the hazards.

- Flowing water can be used to cool the tanks in order to prevent or delay a BLEVE; however, this requires a significant amount of water and should not be attempted unless an unlimited water supply can be located and the tank can be approached safely.

- Evacuate all personnel and isolate the area to a 1600m radius.

- Evaluate the tank from a safe distance away. Choose an upwind position to the side of the tank if possible.

- Leave the area immediately if you hear a rising sound from venting safety devices or see discoloration of the tank.

Fire / Explosion, continued

BLEVE Considerations Based on Tank Capacity

BLEVE

Capacity		Diameter		Length		Propane Mass		Minimum time to failure for severe torch	Approximate time to empty for engulfing fire	Fireball Radius		Emergency Response Distance		Minimum Evacuation Distance		Preferred Evacuation Distance		Cooling Water Flow Rate	
Litres	Gallons	Metres	Feet	Metres	Feet	kg	lbs	Minutes	Minutes	Metres	Feet	Metres	Feet	Metres	Feet	Metres	Feet	Litres/min	Gal/min
100	38.6	0.3	1	1.5	4.9	40	88	4	8	10	33	90	295	154	505	307	1007	94.6	25
400	154.4	0.61	2	1.5	4.9	160	353	4	12	16	53	90	295	244	801	488	1601	189.3	50
2000	772	0.96	3.2	3	9.8	800	1764	5	18	28	92	111	364	417	1368	834	2736	424	112
4000	1544	1	3.3	4.9	16.1	1600	3527	5	20	35	115	140	459	525	1722	1050	3445	598	158
8000	3088	1.25	4.1	6.5	21.3	3200	7055	6	22	44	144	176	577	661	2169	1323	4341	848	224
22000	8492	2.1	6.9	6.7	22	8800	19400	7	28	62	203	247	810	926	3038	1852	6076	1404	371
42000	16212	2.1	6.9	11.8	38.7	16800	37037	7	32	77	253	306	1004	1149	3770	2200	7218	1938	512
82000	31652	2.75	9	13.7	45	32800	72310	8	40	96	315	383	1257	1435	4708	2200	7218	2710	716
140000	54040	3.3	10.8	17.2	56.4	56000	123457	9	45	114	374	457	1499	1715	5627	2200	7218	3539	935

Security Incidents

A security incident is a security-related occurrence, threat or action that has adversely affected people, the environment, assets and economic stability, or could potentially do the same.

General Notes on Prevention of Security Incidents

As defined in the CSA Standard Security Management for Petroleum and Natural Gas Industry Systems (Z246.1-17), a Security Management Program should be implemented to ensure security incidents and threats are identified and managed with appropriate safeguards and response procedures in place.

This documented security risk management process should incorporate threat, vulnerability, risk assessment and asset characterization. Asset characterization, in particular, identifies and ranks any assets that could result in adverse consequences if damaged or destroyed.

To minimize the possibility of threats within a company property, an adequate physical security system must be in place. This should include the following:

- Perimeter fencing and gates to protect against unauthorized entry into a facility – gates should be closed when not in use and locked when unoccupied

- Appropriate signage at the perimeter and entrances

- Intrusion detection systems / alarm systems

- Sufficient lighting in darkness or areas of poor visibility

- Pedestrian access control

- Security guard force, both static and mobile

- Employee awareness

Types of Security Threats

Security-related threats have the intent to cause harm and could include bomb threats, suspicious packages, terrorism, vandalism, trespassing and cyber-attacks.

Responding to Threats

Should any facility or office be the subject of a threat, or be advised of the potential of a terrorist attack, or of the potential of an attack to an adjoining facility being operated by another company, the person receiving the initial threat should remain calm, document all information in writing and notify his supervisor immediately. The supervisor should make an immediate assessment of the circumstances then:

- Obtain all data from the person who received the threat.

- If there is clear and imminent danger, the plant should be immediately evacuated, and the Field Response Team activated from a remote location.

- Contact local police / Royal Canadian Mounted Police (RCMP).

- Notify the Regulatory Agency and the EOC Director.

Security Incidents, continued

Once the Field Response Team is activated, the Field Response Team Incident Commander and a senior company representative will consider the threat and options available to respond to the threat. There are a myriad of potential short and long term responses available and they will be dependent on the evaluation of the threat, time available to respond, resources available locally or that can be brought in a reasonable time, and police and military resources available.

- If the threat is considered possible, the Canadian Security Advisor recommends that the following immediate/short term responses should be considered:

Field Operations:

- Establish intelligence liaison with local authorities (e.g. police).

- Report all suspicious activity to Corporate Security.

- Discontinue all site tours and visits.

- Restrict vehicle access to specifically authorized vehicles only.

- ID all visitors seeking access.

- Assign a person to patrol the perimeter of the facility at the beginning of each operational shift and note any deficiencies; look for signs of attempted break and enter.

- Conduct an evacuation exercise.

Remotely Operated Facilities (also applies to any facility operated by a single person):

- Establish full lock down on fences and assets on the lease/site – everything that can be secured and locked is secured and locked.

- Conduct a fence perimeter patrol before entering the site – look for signs of illegal entrance.

- Conduct a full exterior building patrol before entering a building – look for signs of unlawful entrance (doors pried, windows open, broken glass etc.).

- When working, lock the gates upon entering and leaving the facility, and rigidly adhere to the work alone guidelines.

Bomb Threats

Bomb threats are delivered in a variety of ways. The majority of threats are called in to the target, though occasionally these calls are through a third party. Sometimes a threat is communicated in writing, or by a recording.

Persons making bomb threats generally have one of two motivations:

1. The caller has definite knowledge or believes that an explosive or incendiary bomb has been, or will be, placed. He or she wants to minimize personal injury or property damage. The caller may be the person who placed the device or someone who has become aware of such information.

2. The caller wants to create an atmosphere of anxiety and panic which will, in turn, result in a disruption of the normal activities at the location where the device is purportedly placed.

While most bomb threats are unfounded, some are not. As such, each one must be dealt with as though it is real and handled seriously and calmly.

Security Incidents, continued

Bomb Appearance

Bombs can be constructed to look like almost anything, and can be placed or delivered in any number of ways. The probability of finding a bomb that looks like the stereotypical bomb is almost non-existent. Most bombs are homemade, and are limited in their design only by the imagination and resources available to the bomber.

Remember, when searching for a bomb, suspect anything that looks unusual. Ultimately, however, let a trained bomb technician determine what is or is not a bomb.

Responding to Bomb Threats over the Phone

Most threats or implied threats are received by telephone, generally at a publicized or switchboard number. Should that occur, obtain as much information as possible, filling out the Threatening Call / Bomb Threat form (**Section 6: Forms**).

If a bomb threat is received over the telephone, the employee receiving the phone call should take the following actions:

- Stay calm and keep their voice calm.

- Pay close attention to details. Write information down as the caller says it. Attempt to get the following information from the caller:
    - What type of bomb is being used?
    - Did you place the bomb?
    - Who is the target?
    - Where has the bomb been placed?
    - What time is the bomb set to explode?
    - Why was the bomb placed?
    - What type of container is the bomb placed in?
    - What does it look like?
    - What is the bomber's name?
    - What is the bomber's address?

- While the first employee is dealing with the threatening phone call, they should have a co-worker or another person contact the police (dial 911) using another telephone, and as covertly as possible. As the first employee writes down answers to the questions above, these answers should be relayed to the police.

- The call recipient should attempt to keep the caller on the phone.

- The call recipient should note the caller's:
    - Age and gender
    - Emotional state (angry, agitated, calm, etc.)
    - Speech patterns (accent, tone)
    - Background noise (traffic, people talking and accents, music and type, etc.)

Responding to Bomb Threats Received in Writing

If a threat has been received in writing, minimize the handling of the document to ensure preservation of forensic evidence - DO NOT PHOTOCOPY.

Security Incidents, continued

Supervisor Responsibilities after Receiving a Bomb Threat

The supervisor should then:

- Obtain all data from the person who received the threat

- Activate the ERP if the situation warrants

- Contact local police / Royal Canadian Mounted Police (RCMP) if this has not already been done

- Notify the Regulatory Agency

- Decide on partial or total evacuation (if needed)

- Decide on partial or total search of the facility (if needed)

Evacuating the Facility

If it seems prudent to evacuate the building:

- Have all employees briefly check their work areas for unfamiliar items.

- Instruct all employees not to touch suspicious items, but simply to report them to their supervisors (taking pictures if feasible).

- Instruct all employees not to take personal belongings when they leave.

- Leave doors and windows open

- Do not to turn light switches on or off.

- Do not activate the fire alarm.

- Use stairs only; do not use elevators.

- Use of radio communications should be restricted as the signal could detonate a device.

- All evacuees should report to an outside pre-designated muster area for accountability.

IED Evacuation Distances

Improvised Explosive Device (IED)
SAFE STAND OFF DISTANCE

	Threat Description	Explosives Mass (TNT equivalent)[1]		Building Evacuation Distance[2]		Outdoor Evacuation Distance[3]	
High Explosives (TNT Equivalent)	Pipe Bomb	5 lbs	2.3 kg	70 ft	21 m	850 ft	259 m
	Suicide Belt	10 lbs	4.5 kg	90 ft	27 m	1,080 ft	330 m
	Suicide Vest	20 lbs	9 kg	110 ft	34 m	1,360 ft	415 m
	Briefcase/Suitcase Bomb	50 lbs	23 kg	150 ft	46 m	1,850 ft	564 m
	Compact Sedan	500 lbs	227 kg	320 ft	98 m	1,500 ft	457 m
	Sedan	1,000 lbs	454 kg	400 ft	122 m	1,750 ft	534 m
	Passenger/Cargo Van	4,000 lbs	1 814 kg	640 ft	195 m	2,750 ft	838 m
	Small Moving Van/ Delivery Truck	10,000 lbs	4 536 kg	860 ft	263 m	3,750 ft	1 143 m
	Moving Van/Water Truck	30,000 lbs	13 608 kg	1,240 ft	375 m	6,500 ft	1 982 m
	Semitrailer	60,000 lbs	27 216 kg	1,570 ft	475 m	7,000 ft	2 134 m

Security Incidents, continued

Bomb Search Guidelines

Employees must not touch anything - only law enforcement explosive disposal units or qualified private consultants are qualified to search for a bomb or suspicious package.

In the event of a search, however, employees may be called upon to unlock drawers, cabinets, and the like for the search crew, and to identify any strange or unfamiliar objects.

Explosive Device Located

If a device or suspected device is located:

- Do not touch or move the object.

- Evacuate the immediate area.

- If possible, take steps to minimize effects of an explosion in the vicinity by evacuation or isolation of the area.

- Ensure RCMP are apprised of the location so explosive disposal unit can be called.

If there is an Explosion
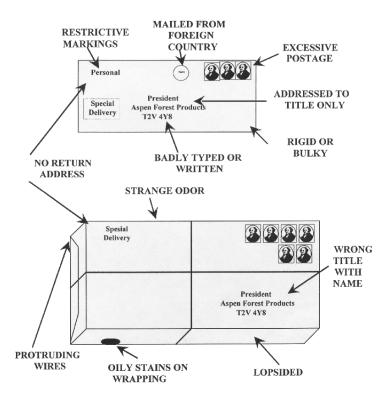
- Have employees take cover under sturdy furniture, or leave the building if directed to do so by emergency responders.

- Stay away from windows.

- Do not light matches.

- Move well away from the site of the hazard to a safe location.

- Use stairs only; do not use elevators.

- Call 911 if no one has called.

Suspicious Packages

The likelihood of receiving a bomb in the mail is remote. Unfortunately, however, a small number of explosive devices have been mailed over the years resulting in death, injury and destruction of property.

A bomb can be enclosed in either a parcel or an envelope, and its outward appearance is limited only by the imagination of the sender. However, mail bombs have unique characteristics that may assist in identifying suspect packages.

Security Incidents, continued

Appearance of Suspicious Packages

RESTRICTIVE MARKINGS
MAILED FROM FOREIGN COUNTRY
EXCESSIVE POSTAGE
Personal
Special Delivery
President
Aspen Forest Products
T2V 4Y8
ADDRESSED TO TITLE ONLY
RIGID OR BULKY
NO RETURN ADDRESS
BADLY TYPED OR WRITTEN
STRANGE ODOR
Spesial Delivery
President
Aspen Forest Products
T2V 4Y8
WRONG TITLE WITH NAME
PROTRUDING WIRES
OILY STAINS ON WRAPPING
LOPSIDED

- Mail bombs may display restricted endorsements such as "Personal" or "Private". This factor is important when the addressee does not usually receive personal mail.

- Addressee's name / title may be inaccurate.

- Return address may be fictitious.

- Mail bombs may reflect / distort handwriting or the name and address may be prepared with homemade labels or cut-and-paste lettering.

- Cancellation or postmark may show a different location than the return address.

- Mail bombs may have excessive postage.

- Mail bombs may feel rigid or appear uneven or lopsided and may have an irregular shape, soft spots or bulges.

- Parcel bombs may be unprofessionally wrapped with several combinations of tape used to secure the package and may be endorsed "Fragile – Handle With Care" or "Rush – Do Not Delay".

- Parcel bombs may have a buzzing or ticking noise or a sloshing sound.

- Pressure or resistance may be noted when removing contents from an envelope or parcel.

Security Incidents, continued

Dealing with Suspicious Packages

If an employee is suspicious of a mailing and is unable to verify the contents with the addressee or sender:

- Do not open the article.

- Isolate the item and evacuate the immediate area.

- Do not put the package or envelope in water or a confined space such as a desk drawer or filing cabinet.

- If possible, open windows in the immediate area to assist in venting potential explosive gases.

If an employee suspects a harmful chemical or biological substance is in a package already on company property they should:

- Cover the package or envelope with a plastic sheet, raincoat, etc.

- Evacuate the room closing all doors and windows.

- Call their supervisor who will contact the local police.

- Isolate the area where the package is.

- Isolate themselves in another area that has a telephone and wait for the emergency responders to arrive.

If an employee has touched a package that possibly contains a harmful substance or got some on their clothes, they should:

- Wash their hands well.

- Shower with their clothes on

- Undress and seal their clothes in a plastic bag.

- Shower again and put on fresh clothes.

If an employee has any reason to believe a letter or parcel is suspicious, they should never take a chance or worry about possible embarrassment if the item turns out to be innocent.

Trespassing

Any person who enters land where entry is prohibited or does not leave land immediately after being directed to do so by the owner or occupier of the land is guilty of trespassing.

Dealing with Trespassing

If any personnel encounter a trespasser:

- Ask the trespasser to leave the unauthorized area.

- Give the trespasser a reasonable amount of time to leave peacefully.

- If the trespasser refuses to leave, call the RCMP / local authority.

Security Incidents, continued

Vandalism

Vandalism is the willful damaging or defacing of property belonging to another person or to the public. Acts of vandalism can include:

- **Defacing** – removing, marking or damaging a part of an object to draw attention to it.
- **Criminal damage** – willful and unlawful destruction of other people's property.
- **"Tagging" or graffiti** – gangs use "tags" to mark their territory and usually spray-paint walls and doors of homes and business establishments.

Vandalism can happen at any time of the day or night and in any season, but it most often occurs:

- In the evening during summer and fall
- On weekday evenings
- At night when fewer people are around and the property isn't under as much scrutiny
- Where building design and lighting offers concealment and anonymity
- In areas frequented by young people such as schools, parks, shopping plazas and public buildings
- In unoccupied buildings, open spaces or parked vehicles where minimum surveillance is given to property

Dealing with Vandalism

- Report all incidents of vandalism to a supervisor
- Do not paint over vandalism and graffiti until the police department gives clearance to do so.

Terrorism

Terrorism is the use of violence and threats against persons or property for the purposes of intimidation, coercion or ransom. The direct targets of violence are not the main targets of a terrorist but a means to draw the attention of the local populace, the government and the world to their cause. A terrorist group commits acts of violence to:

- Produce widespread fear
- Obtain worldwide, national, or local recognition for their cause by attracting the attention of the media
- Destroy facilities or disrupt lines of communication in order to create doubt that the government can provide for and protect its citizens
- Discourage foreign investments, tourism or assistance programs that can affect the target country's economy and support of the government in power
- Influence government decisions, legislation or other critical decisions
- Satisfy vengeance

Acts of terrorism include threats of terrorism, assassinations, kidnappings, hijackings, bomb scares and bombings, cyber-attacks, and the use of chemical, biological, nuclear and radiological weapons.

Security Incidents, continued

Examples of Petroleum Assets Subject to Risk

- Buildings: Administration offices, corporate offices, control rooms

- Equipment: Process units and associated control systems, product storage tanks, surge vessels, boilers, turbines, process heaters, sewer systems

- Support Systems: Utilities such as natural gas lines, electrical power grid and facilities (including back-up power systems), water-supply systems, wastewater treatment facilities

- Transportation Interfaces: Railroad lines and railcars, product loading racks and vehicles, pipelines entering and leaving facility, marine vessels and dock area, off-site storage areas

- Cyber systems and information technology: Computer systems, networks, all devices with remote maintenance ports, SCADA systems, laptops, PDAs and cell phones.

Dealing with Terrorism

All threats and incidents should be reported to the RCMP Terrorism Tip Line at 1-800-420-5805.

In order to deal with threats of terrorism, it is important to establish a security management system to effectively manage security risks. This system should include a security risk management process incorporating asset characterization, threat assessment, vulnerability assessment, risk assessment, risk mitigation, communication and recommendations.

This system should be reviewed at regular intervals and updated as necessary.

Cyber-Attacks

Cyber-attacks are computer-to-computer attacks that undermine confidentiality, integrity or availability of a computer or the information contained.

Cyber-attacks can make computer systems malfunction or result in a disrupted flow of data and have the potential to create extreme economic damage.

This threat includes a risk to SCADA and DCS systems, which collect, display and store information in support of controlling equipment, devices and facilities.

Preventing Cyber-Attacks

Steps that can be taken to enhance your cyber security:

- Know who owns and operates the IT system and its operating framework.

- Map the network – include all internal/external connections, configuration control, etc.

- Develop a security policy structure and implement compliance monitoring.

- Apply as much security and hardening as appropriate.

- Accredit the IT system and follow a risk management approach.

- Know the system's possible vulnerabilities.

- Patch the system in a timely manner – the longer this is delayed, the longer the system is vulnerable.

- Reduce Internet access points.

- Reduce or eliminate potential sources of infection – USB flash drives (thumb drives, USB keys, etc.), flash media, etc.

Security Incidents, continued

- Communicate, train and educate staff and users.

Source: 10 IT Security "Commandments" - Communications Security Establishment Canada

Dealing with Cyber-Attacks

In the event of a cyber-incident:

- After obtaining corporate approval, local police or RCMP should be notified.

Serious cyber incidents:

- Should be reported to Public Safety Canada by email at contact@cyber.gc.ca or by phone at 1-833-292-3788.

Section 5: External Agencies
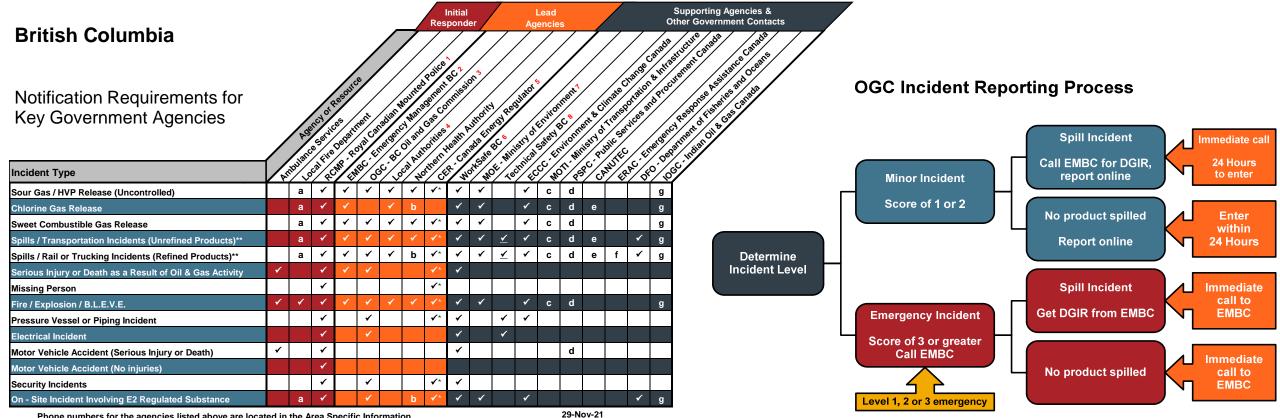
Provincial Notification Matrices
Provincial Lead Agency Roles
Government Consultation Summary
Specific Government Agency Roles
  Health Services
  Local Authority
Provincial Supporting Agency Roles
Federal Agency Roles

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British Columbia

Notification Requirements for Key Government Agencies

Incident Type	Ambulance Services	Local Fire Department	RCMP [1]	EMBC [2]	OGC [3]	Local Authorities [4]	Northern Health Authority	CER [5]	WorkSafe BC [6]	MOE [7]	Technical Safety BC [8]	ECCC	MOTI	PSPC	CANUTEC	ERAC	DFO	IOGC
Sour Gas / HVP Release (Uncontrolled)		a	✓	✓	✓	✓	✓*	✓	✓		✓	c	d					g
Chlorine Gas Release	(red)	a	✓	✓	✓	✓	b	✓	✓		✓	c	d	e				g
Sweet Combustible Gas Release		a	✓	✓	✓	✓	✓*	✓	✓		✓	c	d					g
Spills / Transportation Incidents (Unrefined Products)**	(red)	a	✓	✓	✓	✓	✓*	✓	✓	✓	✓	c	d	e		✓		g
Spills / Rail or Trucking Incidents (Refined Products)**		a	✓	✓	✓	✓	b	✓*	✓	✓	✓	c	d	e	f	✓		g
Serious Injury or Death as a Result of Oil & Gas Activity	✓	(red)	✓	✓	✓	✓		✓*	✓									
Missing Person		✓						✓*										
Fire / Explosion / B.L.E.V.E.	✓	✓	✓	✓	✓	✓	✓*	✓	✓		✓	c	d					g
Pressure Vessel or Piping Incident		✓					✓*		✓	✓								
Electrical Incident		✓																
Motor Vehicle Accident (Serious Injury or Death)	✓	✓						✓					d					
Motor Vehicle Accident (No injuries)		✓																
Security Incidents		✓		✓			✓*	✓										
On - Site Incident Involving E2 Regulated Substance	(red)	a	✓		✓		b	✓*	✓	✓		✓				✓		g

Phone numbers for the agencies listed above are located in the Area Specific Information 29-Nov-21

✓ Compulsory contact

* CER is a compulsory contact only for emergencies and near-misses involving CER regulated sites and inter-provincial pipelines.

** Refer to the British Columbia Petroleum Release Reporting Requirements chart included in the ERP.

_ Technical Safety BC only requires reporting of rail related accidents, incidents and spills. No other transportation related emergencies need to be reported.

EMBC to notify the OGC for all incident types including fire/explosion incidents, pressure vessel incidents, spills and releases, or electrical incidents occurring at facilities approved by the OGC.

EMBC to notify the Ministry of Environment for any incident which affects the water, air, or land environment, or any white or green space in the province.

EMBC to notify Environment & Climate Change Canada (ECCC) of all oil and gas incidents in time, but immediately as required for incidents involving regulated substances at E2 registered facilities, incidents involving PCBs or any spills on First Nations lands, in National Parks, into river or lake systems containing fish, or onto railway right-of-way.
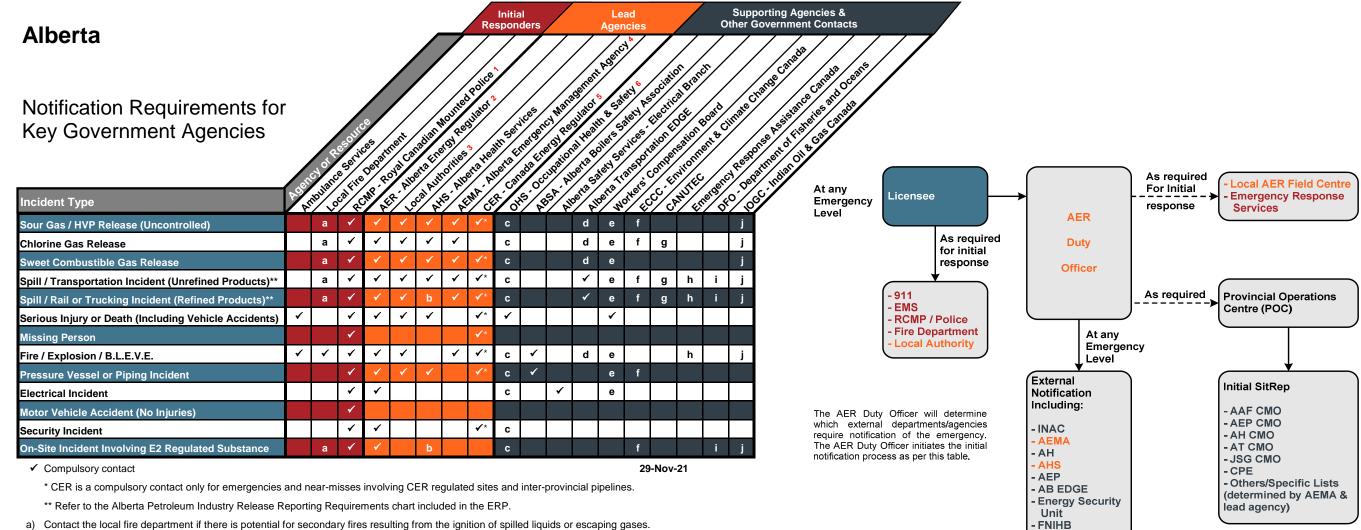
EMBC to notify Ministry of Forests, Lands and Natural Resources Operations, Northern Health Authority, affected municipalities and all other level of government and industry; depending on the ECC code level in their SOPs.

a) Contact the local fire department if there is potential for secondary fires resulting from the ignition of spilled liquids or escaping gases.

b) Contact the Northern Health Authority if the incident affects public health, e.g., contaminated drinking water.

c) Contact the Ministry of Transportation and Infrastructure (MOTI) and the RCMP if the emergency intersects with a 1, 2 or 3 digit Provincial or Secondary highway (e.g., Hwy 2, Hwy 47, Hwy 837). MOTI and RCMP have the authority to shut down highways.

d) Contact Public Services and Procurement Canada (PSPC) and the RCMP if the emergency intersects with the Alaska Highway (97) north of mile 83.5 all the way to the Yukon border. PSPC and RCMP have the authority to shut down this portion of the Alaska highway.

e) Contact the Canadian Transport Emergency Centre (CANUTEC) when a highway is shut down, there is an injury or fatality, there is lost, stolen or unlawfully interfered with dangerous goods (except Class 9), the incident involves infectious substances, there is an accidental release from a cylinder that has suffered a catastrophic failure, where the shipping documents display CANUTEC's telephone number, where a railway vehicle, ship, aircraft aerodrome or an air cargo facility is involved, when a facility is closed, evacuation/shelter-in-place procedures take place as a result of the transportation of dangerous goods, containment has been damaged and integrity compromised, or the centre/stub sill of a tank car is broken or there is a crack in the metal ≥ 15cm(6"). CANUTEC can also provide guidance on handling procedures for toxic material releases.

f) Emergency Response Assistance Canada will only respond to transportation incidents and only incidents that involve the following UN numbers: 1075 (Propane, Butane, etc.) and 1010 (Butadiene); and those products have tank storage capacity of 450 litres or greater.

g) Indian Oil & Gas (IOGC), the First Nation and the provincial authority must be notified immediately in the event of any health or environment-threatening emergency or off-lease spills on First Nation reserve lands. On-lease spills greater than 1m3 must be reported to IOGC immediately.

1 In the event of a fatality, request that the RCMP contact the Medical Examiner. The RCMP must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infections substances.

2 Notify Emergency Management BC (EMBC) for all spill and non-spill incidents to receive a Dangerous Goods Incident Report (DGIR) number. EMBC will notify the OGC and Ministry of Environment, and will provide a representative to coordinate the provincial response.

3 Contact the OGC for any spills or release of hazardous substances that are not provincially regulated (such as radioactive materials), pipeline incidents such as spills during construction phase, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device during operations, drilling kicks when any of the following occur: pit gain of 3m^3 or greater, casing pressure 85% of MA, 50% out of hole when kicked, well taking fluid (LC), associated spill or general situation deterioration such as leaks, equipment failure or unable to circulate etc., major damage to oil and gas roads or road structures and security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only. The OGC must also be notified of needed emergency oil and gas road closures. The OGC may request a NOTAM order upon request from operator.

4 Local authorities include regional district disaster services, national park authorities and the local police.

5 Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for all emergencies and near misses involving CER regulated sites and inter-provincial pipelines. The CER regulates all inter-provincial pipelines and other facilities and sites located in Frontier lands (Northern Canada).

6 Ensure any workplace conditions that present an immediate hazard to other workers are addressed, ensure first aid and medical treatment for the worker, and then notify WorkSafeBC of the incident. The requirement to immediately report a serious injury or fatality is separate from the requirement to report injuries for claims purposes. Failure to immediately notify WorkSafeBC will be considered a breach of section 172 of the Workers Compensation Act. The employer must immediately report the following incidents, injury or not: Any incident that kills, causes risk of death, or seriously diving incident or decompression sickness, a major leak or release of a dangerous substance, a major structural failure or collapse of a structure, equipment, construction support system or excavation, or any serious mishap. Must also report incidents that requires the employee to seek medical attention or cause time-loss from work.

7 Ministry of Environment was formerly known as Ministry of Water, Land and Air Protection.

8 Technical Safety BC is to be notified immediately in cases of Boilers, Pressure Vessels, Piping and Fittings, Electrical & Gas incidents resulting in a moderate, major and fatal injury or moderate, major or severe property damage. All other incidents must be reported within 24 hours (or as soon as practical). Rail accidents where a person sustains a serious injury or is killed as a result of being on board or getting on or off the rolling stock, or coming into contact with any part of the rolling stock or its contents, or the rolling stock is involved in a grade crossing collision or a derailment, sustains damage that affects its safe operations, or causes or sustains a fire or explosion, or causes damage to the railway, that poses a threat to the safety of any person, property or the environment, or any dangerous good is released.

OGC Incident Reporting Process

Determine Incident Level

Minor Incident — Score of 1 or 2
- **Spill Incident** — Call EMBC for DGIR, report online → Immediate call 24 Hours to enter
- **No product spilled** — Report online → Enter within 24 Hours

Emergency Incident — Score of 3 or greater — Call EMBC
- **Spill Incident** — Get DGIR from EMBC → Immediate call to EMBC
- **No product spilled** → Immediate call to EMBC

Level 1, 2 or 3 emergency

British Columbia Notification Matrix

H2Safety

Alberta

Notification Requirements for Key Government Agencies

Alberta Notification Matrix

Incident Type	Ambulance Services	Local Fire Department	RCMP - Royal Canadian Mounted Police [1]	AER - Alberta Energy Regulator [2]	Local Authorities [3]	AHS - Alberta Health Services	AEMA - Alberta Emergency Management Agency [4]	CER - Canada Energy Regulator [5]	OHS - Occupational Health & Safety [6]	ABSA - Alberta Boilers Safety Association	Alberta Safety Services - Electrical Branch	Alberta Transportation EDGE	Workers' Compensation Board	ECCC - Environment & Climate Change Canada	CANUTEC	Emergency Response Assistance Canada	DFO - Department of Fisheries and Oceans	IOGC - Indian Oil & Gas Canada
Sour Gas / HVP Release (Uncontrolled)	a	✓	✓	✓	✓	✓	✓	✓*	c			d	e	f				j
Chlorine Gas Release	a	✓	✓	✓	✓	✓			c			d	e	f	g			j
Sweet Combustible Gas Release	a	✓	✓	✓	✓	✓		✓*	c			d	e					j
Spill / Transportation Incident (Unrefined Products)**	a	✓	✓	✓	✓	✓		✓*	c			✓	e	f	g	h	i	j
Spill / Rail or Trucking Incident (Refined Products)**	a	✓	✓	✓	✓	b		✓*	c			✓	e	f	g	h	i	j
Serious Injury or Death (Including Vehicle Accidents)	✓		✓	✓	✓	✓		✓*	✓				✓					
Missing Person			✓					✓*										
Fire / Explosion / B.L.E.V.E.	✓	✓	✓	✓	✓			✓*	c			d				h		j
Pressure Vessel or Piping Incident		✓	✓	✓	✓			✓*	c	✓			e	f				
Electrical Incident		✓	✓						c		✓		e					
Motor Vehicle Accident (No Injuries)		✓																
Security Incident		✓	✓					✓*	c									
On-Site Incident Involving E2 Regulated Substance	a	✓	✓		b				c					f			i	j

29-Nov-21

✓ Compulsory contact

* CER is a compulsory contact only for emergencies and near-misses involving CER regulated sites and inter-provincial pipelines.

** Refer to the Alberta Petroleum Industry Release Reporting Requirements chart included in the ERP.

a) Contact the local fire department if there is potential for secondary fires resulting from the ignition of spilled liquids or escaping gases.

b) Contact Alberta Health Services (AHS) if the incident has the potential to impact public health (e.g., contaminated drinking water).

c) Contact Occupational Health & Safety and report when: an injury or accident results in death; an injury results in a worker being admitted to a hospital; a potentially serious incident (PSI) where a reasonable and informed person would determine that under slightly different circumstances, there would be a high likihood for a serious injury to a person; there is an unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential to cause a serious injury; there is a collapse or upset of a crane derrick or hoist or; there is a collapse or failure of any component of a building or structure necessary for its structural integrity.

d) Alberta Transportation EDGE (Environmental and Dangerous Goods Emergencies) is the first call for all transportation related spills/incidents. If spill is contained on-site, Alberta Transportation will contact the AER. If the spill moves off-site or into a waterbody, Alberta Transportation will contact Alberta Environment and Parks (AEP) and/or Environment & Climate Change Canada (ECCC). Contact Alberta Transportation or the RCMP if an oil & gas emergency affects a highway designated by 1, 2, or 3 digits (e.g., Hwy 2, Hwy 47, Hwy 837). Alberta Transportation and RCMP have the authority to shut down highways.

e) Contact the Workers' Compensation Board within 72 hours of being notified of an injury/illness that results in or will likely result in: Lost time or the need to temporarily or permanently modify work beyond the date of accident, death or permanent disability, a disabling or potentially disabling condition caused by occupational exposure or activity, the need for medical treatment beyond first aid, or medical aid expenses.

f) ECCC will be notified by AER as required for incidents involving regulated substances at E2 registered facilities, incidents involving PCBs or any spills on first nations lands, in National Parks, into river or lake systems containing fish, or onto railway right-of-way.

g) Contact the Canadian Transport Emergency Centre (CANUTEC) when a highway is shut down, there is an injury or fatality, there is lost, stolen or unlawfully interfered with dangerous goods (except Class 9), the incident involves infectious substances, there is an accidental release from a cylinder that has suffered a catastrophic failure, where the shipping documents display CANUTEC's telephone number, where a railway vehicle, ship, aircraft aerodrome or an air cargo facility is involved, when a facility is closed, evacuation/shelter-in-place procedures take place as a result of the transportation of dangerous goods, containment has been damaged and integrity compromised, or the centre/stub sill of a tank car is broken or there is a crack in the metal ≥ 15cm(6"). CANUTEC can also provide guidance on handling procedures for toxic material releases.

h) Emergency Response Assistance Canada will only respond to incidents that involve the following UN numbers: 1075 (Propane, Butane, etc.) and 1010 (Butadiene); with a tank storage capacity of 450 litres or greater. Advisory assistance will be provided to incidents involving tank storage capacities less than 450 litres.

i) Contact the Department of Fisheries and Oceans Canada to report an oil spill that occurs in or around fresh and marine waters.

j) Indian Oil & Gas (IOGC), the First Nation and the provincial authority must be notified immediately in the event of any health or environment-threatening emergency or off-lease spills on First Nation reserve lands. On-lease spills greater than $1m^3$ must be reported to IOGC immediately.

1. In the event of a fatality, request that the RCMP contact the Medical Examiner. The RCMP must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infections substances.

2. Alberta Energy Regulator is designated as the lead agency (single window approach) to implement the Gov't of Alberta Emergency Response Support Plan for a Petroleum Industry Incident.

3. Local Authorities include: cities, towns, villages, counties, municipal districts, improvement districts, special areas, Métis settlements, and first nations reserves.

4. Request that Alberta Emergency Management Agency identify the affected local authorities and implement Emergency Services. The Emergency Management Field Officer may provide assistance in contacting some or all of the local authorities.

5. Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for emergencies and near-misses involving CER regulated sites and inter-provincial pipelines.

6. Occupational Health and Safety - see c) for further details on this agency's role.

Flowchart

At any Emergency Level

Licensee → **AER Duty Officer**

As required for initial response:
- 911
- EMS
- RCMP / Police
- Fire Department
- Local Authority

As required For Initial response →
- Local AER Field Centre
- Emergency Response Services

As required → **Provincial Operations Centre (POC)**

At any Emergency Level →

The AER Duty Officer will determine which external departments/agencies require notification of the emergency. The AER Duty Officer initiates the initial notification process as per this table.

External Notification Including:
- INAC
- AEMA
- AH
- AHS
- AEP
- AB EDGE
- Energy Security Unit
- FNIHB
- Etc.

Initial SitRep
- AAF CMO
- AEP CMO
- AH CMO
- AT CMO
- JSG CMO
- CPE
- Others/Specific Lists (determined by AEMA & lead agency)

H2Safety

	Before the Incident	During the Incident	After the Incident

Lead Agency Roles

Common Tasks

Before the Incident
- ❑ All departments/agencies should participate in training and exercises for this plan and the Energy Resources Industry Emergency Support Plan (ERIESP).
- ❑ This plan will be reviewed as required.
- ❑ A join multi-department/agency exercise will be held as required.

During the Incident
- ❑ The AER may activate the ERIESP based on the following criteria:
  - ❑ Level 2 or 3 emergencies (as defined by the AER)
  - ❑ Any level of emergency:
    - ❑ requires coordination of multi-agency response;
    - ❑ requires coordination of information and communication between departments/agencies and/or has significant provincial/national media interest.
- ❑ Elevations of the POC will be escalated by AEMA. Once the elevations level of the POC has been escalated, provincial-level emergency control will be coordinated by AEMA under the leadership of the lead agency.
- ❑ The AER will develop emergency objectives to guide the GoA response and support to duty holders and local authorities. AEMA will assist the AER by providing leadership and strategic policy direction for the GoA as per the *Government Emergency Management Regulation (AR 248/2007)*.
- ❑ GoA emergency management assistance will be provided to the local authority as requested and as long as is required by the local authority.

After the Incident
- ❑ Complete a Post Incident Assessment (PIA) based on the scope of their involvement and the outcome.
- ❑ Integrate PIA into internal response processes.
- ❑ All departments/agencies will participate in a joint PIA to be coordinated by AER. Participation from each department/agency will be determined by the response to the emergency.
- ❑ Reports required by other regulatory authorities must be completed and delivered to the appropriate regulatory body within the time lines they prescribe.

*Alberta Energy Regulator (AER)

Before the Incident
- ❑ Confirm and act as lead Government of Alberta (GoA) organization in energy resources industry emergency preparedness and response.
- ❑ Set requirements for planning for, and responding to energy resources industry emergencies.
- ❑ Participate in exercises of this plan.
- ❑ Review and recommend changes to this plan.
- ❑ Maintain 24/7 telephone contact where energy resources industry emergencies can be reported.
- ❑ Maintain 24/7 emergency contact numbers where resources can be accessed to carry out a response to this plan.
- ❑ Make this plan available to stakeholders.
- ❑ Communicate changes to the plan with stakeholders.
- ❑ Maintain emergency response resources.
- ❑ Act as Subject Matter Expert (SME).

During the Incident
- ❑ Receive notification of energy resources industry emergencies.
- ❑ Determine the emergency level of an emergency through consultation with the duty holder.
- ❑ Dispatch AER representative to the site of the emergency, as required.
- ❑ Confirm that local resources have been notified as appropriate.
- ❑ Monitoring discharges and ensuring appropriate mitigation and response actions are taken to reduce the impact of liquid releases for land based spills and to ensure watercourses are protected.
- ❑ Confirm, plan and/or implement public safety actions taken to ensure the safety of the public and the environment, including issuing Fire Hazard Orders or requesting NOTAMs.
- ❑ As lead agency, provide coordination for departments/agencies and duty holder on site.
- ❑ Request a local authority liaison officer to be present at the REOC, if necessary.
- ❑ Activate the Energy Resources Industry Emergency Support Plan.
- ❑ Advise AEMA to escalate POC activation (if required).
- ❑ Identify and request initial provincial resources to support the emergency response, to be coordinated at the regional level if necessary through a local or regional EOC.
- ❑ Initiate consolidated Situation Reports through AEMA.
- ❑ Provide Situation Reports to AEMA if requested.
- ❑ Send an AER representative to the emergency location and/or the incident command post.
- ❑ Establish an EOC at the local AER Field Centre until the duty holder or local authority establishes a REOC. AER ECC will be expanded if a REOC is not established.
- ❑ Dispatch an AER representative to the REOC when it opens.
- ❑ Request the deployment of other provincial GoA department/agency representative to be present at the REOC, or the local AER Field Centre ECC.
- ❑ Provide timely situation reports, through AEMA, to other GoA departments/agencies activated by this plan.
- ❑ Notify all participants when the emergency has concluded and there is no longer any hazard to the public.

After the Incident
- ❑ Conduct the PIA related to the response, as described by the ERIESP.
- ❑ As part of the PIA, recommend any mitigation actions that may improve the coordination of the GoA response, as described by the ERIESP.
- ❑ Establish processes to receive and address community concerns.
- ❑ Review and update the ERIESP, in consultation with AEMA.
- ❑ Communicate any changes to the ERIESP to applicable stakeholders.

*AEMA

Before the Incident
- ❑ Act as the provincial coordinating agency in energy resources industry emergency responses as per the *Emergency Management Act*.
- ❑ Maintain list of 24 hour emergency contact numbers.
- ❑ Maintain 24 hour duty manager system.

During the Incident
- ❑ Confirm AER has been notified.
- ❑ Conduct the notification in accordance with Section 5.3.
- ❑ Obtain a situation report from the AER, AEP, local authority, etc.
- ❑ Confirm the level of emergency.
- ❑ Elevate the POC as required.
- ❑ Notify the appropriate provincial officials as per standard operating procedures.
- ❑ Release consolidated Situation Reports in accordance with section 3.4.4.
- ❑ Coordinate the Government of Alberta response including requests for provincial/federal resources.
- ❑ Provide ongoing situation reports or briefing notes to appropriate provincial officials in accordance with the AEP or as requested.
- ❑ Notify partners and stakeholders when the event is over.

After the Incident
- ❑ Participate in all PIAs related the ERIESP.
- ❑ Complete documentation or reporting in relation to the activation of the ERIESP and the emergency for all GoA-wide PIAs.

Local Authority

Before the Incident
- ❑ Work with the operator to effectively prepare for a petroleum industry incident. Provide input to the industrial operator's site-specific plan to ensure it is compatible with the Municipal Emergency Plan (MEP), where feasible.
- ❑ Participate in industrial operators' preparatory training and exercises where possible.
- ❑ Train personnel to carry out functions as assigned by MEP or procedures.
- ❑ Maintain 24 hour emergency contact numbers.
- ❑ Meaningful planning (including confirmation and coordination of roles and responsibilities) between the local authority and the licensee/operator has taken place.
- ❑ Details on municipal emergency response capacity and planning are found in the applicable municipal emergency plan.

During the Incident
- ❑ Receive notification and work with the licensee/operator.
- ❑ In a petroleum industry incident, determine if the incident can be managed and the level of support that would be needed if required from AER and AEMA. If the local authority, licensees or operators are unable to manage the response, the AER with assistance from AEMA will manage the response.
- ❑ Send a local authority liaison officer to be present at the AER regional EOC if necessary.
- ❑ If AEMA is providing support provide regular situation reports.
- ❑ Respond to and assess the emergency incident.
- ❑ Establish contact with the industrial operator in order to:
  - ❑ Obtain additional hazard information.
  - ❑ Determine where road blocks should be or are established.
  - ❑ Determine the direction of approach to the incident.
  - ❑ Determine if there are any injuries.
  - ❑ Find out what response and public protection actions have been taken.
  - ❑ Identify the location of the On-site Command Post (OSCP) and any Emergency Operations Centres (EOCs).
- ❑ Activate the MEP, when required.
- ❑ Manage the Local Authority's emergency response.
- ❑ Activate the emergency public warning system to alert people to life threatening hazards, as required.
- ❑ Activate the Municipal EOC (MEOC), as required.
- ❑ Initiate public protection measures, as necessary.
- ❑ May dispatch a representative to the Provincial Operations Centre (POC), when it is established, to coordinate the response, if requested.
- ❑ If necessary, declare a local State of Emergency.
- ❑ If the hazard area extends beyond the Emergency Planning Zone (EPZ), the county will coordinate evacuation of the public as well as reception centre establishment and maintenance with the industrial operator.
- ❑ When possible, work with all other responders to establish a single Regional EOC (REOC).
- ❑ Establish a public information service, including the use of the news media to inform and instruct the public of the emergency and of any protective actions to be taken.
- ❑ Coordinate news releases with the licensee, if required.
- ❑ Inform AEMA and the public when the emergency is over.

After the Incident
- ❑ Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.
- ❑ Participate in multi-agency debriefings.

Alberta Health Services (AHS)

Before the Incident
Alberta Health Services (AHS) - Environmental Public Health (EPH) roles and responsibilities in public health emergency preparedness and response to oil and gas industry are outlined below. The provision of services during an emergency depends upon our assessment of legislative responsibilities, impact to services, and business continuity.

Environmental Public Health will endeavor to:

- ❑ Participate with the licensee in the development of their Emergency Response Plans as it relates to the Environmental Public Health Program's role and responsibility.
- ❑ Provide the AHS Zone Single-Point-of-Contact (SPOC) emergency phone number to enable the Licensee to notify and alert the Zone of an emergency. From the initial notification or alert, AHS emergency response will fan out and coordinate with other AHS programs and facilities as necessary. The 911 EMS services remain independent of the Zone SPOC notification/alert process.
- ❑ Participate with stakeholders in preparedness training and exercises associated with a Licensee's simulated activation of an Emergency Response Plan in which Environmental Public Health has a role and responsibility.
- ❑ Participate in public information sessions during the Licensee's Emergency Response Plan development process when appropriate and as resources allow.

During the Incident
- ❑ Provide guidance to stakeholders and local municipal authorities in identifying sites suitable for establishing and operating an evacuation centre and/or reception centre, including operational requirements.
- ❑ Provide guidance to stakeholders on substances that may affect public health in consultation with the Zone Medical Officer of Health (MOH), including Alberta Health Acute Exposure Health Effects for Hydrogen Sulphide and Sulphur Dioxide information.
- ❑ Conduct assessments, inspections and give regulatory direction, when appropriate, to ensure the requirements of provincial legislation and EPH program areas of responsibilities for public health protection and disease prevention are maintained.
- ❑ Notify the Zone Medical Officer of Health of any incident affecting or potentially affecting other AHS programs or facilities. The Zone MOH will notify and coordinate emergency response in other program areas and facilities as necessary.
- ❑ Establish EPH emergency management operations, when appropriate, to support regional efforts and liaise with the Government Emergency Operations Centre, Municipal Emergency Operations Centre and/or Industry Emergency Operations Centre, if needed.
- ❑ Assist the Zone Medical Officer of Health, local municipal authority, and Public Information/Communication officers in the development, issuance, and rescinding of public health, public evacuation, and shelter-in-place advisories.
- ❑ Provide guidance to stakeholders on matters relating to evacuation of the public and/or public facilities, and the re-occupancy of those evacuated areas or facilities.
- ❑ Record and respond to health complaints or concerns from the public during and following and incident.

After the Incident
- ❑ Record and respond to health complaints or concerns from the public during and following and incident.
- ❑ Participate in stakeholder debriefings as necessary.

Note: The roles for the local authority(s) and regional health authority(s) are not outlined in the Energy Resources Industry Emergency Support Plan (ERIESP) Plan and will be coordinated during the public consultation program.

*AER - Alberta Energy Regulator   *AEMA - Alberta Emergency Management Agency   *AHS - Alberta Health Services

Revised June 2018

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Alberta

Lead Agency Roles

AB Emergency Services

Before the Incident

The first level of emergency response is provided by fire and/or police services and may involve the activation of the Emergency Operations Centre (EOC). Other first responders, such as the RCMP and Emergency Medical Services, or EMS, have a provincial mandate but with a local presence through detachments or stations. These agencies are usually accessed through 911 and have internal dispatch arrangements.

❑ First responders work at the site level of an event and include police, fire and ambulance. Activities of first responders include medical response, firefighting and managing crowds or evacuation zones

❑ When a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC

❑ First response services provided by a fire department are determined by the local authority responsible, and may include hazardous material incident response, road rescue, and medical rescue

❑ Emergency Medical Services, or EMS, operates under the authority of the Alberta Health Services. No matter where an emergency happens in Alberta, AHS EMS can transport patients by either a ground ambulance or air ambulance – fixed wing airplane or helicopter.

❑ AHS EMS staff actively participates in emergency planning, mock emergency exercises and other joint training initiatives to ensure emergency preparedness and response resources are identified and deployed quickly and effectively when they are needed most

❑ Maintain readiness status for emergency notification

❑ Participate in industrial operators' exercises where possible

❑ Maintain 24 hour emergency contact numbers

During the Incident

RCMP

❑ RCMP or local police would also become involved if there are fatalities, as they are required to participate in the investigations. This could be through the medical examiner.

❑ Maintain law and order and assist the operator with local security but would require discussion with the local police at the time.

❑ The Office of the Fire Commissioner (OFC) has a working relationship with the RCMP and the RCMP may conduct selected duties of the Fire Commissioner where the fire's impact is not significant.

❑ Assist with traffic control, crowd control, evacuation, and residence security.

❑ Typically would not be involved in setting up or maintaining roadblocks unless the emergencies impacted or required the closure of 1, 2 and 3 digit Provincial or Secondary highways.

❑ Establish and maintain communications with industrial operator.

❑ Dispatch a representative to the off-site Regional Emergency Operations Centre, when established, to coordinate the response.

❑ Coordinate with the industrial operator both the establishment and the administration of reception centres for evacuees.

❑ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.

Fire

❑ Respond to and assess emergency incident to the scope of their abilities.

❑ Establish a unified OSCP / ICP (On-site Command Post / Incident Command Post).

❑ Communicate to MEOC and provide site reps as required.

❑ Assist with fire protection where trained personnel are available.

❑ Provide emergency medical assistance, as required.

❑ Coordinate news releases with the licensee, if required.

EMS

❑ Respond to and assess emergency incident to the scope of their abilities.

❑ The Alberta Health Services provides and coordinates ambulance services within Alberta, including triage, treatment, transportation and care of casualties

❑ Provide emergency medical assistance, as required. Emergency Medical Technicians (EMT) or Emergency Medical Responders (EMR) provide basic patient assessment and treatment including obtaining vital signs, administering oxygen and splinting extremities.

❑ ALS ambulances have at least one paramedic with expanded training, scope of practice, and can provide advanced treatment in airway management and medication administration.

After the Incident

❑ Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.

❑ Participate in multi-agency debriefings.

Note: The roles for the local authority(s) and regional health authority(s) are not outlined in the Petroleum Industry Incident Support Plan and will be coordinated during the public consultation program.
*AER - Alberta Energy Regulator (Oil & Gas / *AEP - Alberta Environment and Parks)   *AEMA - Alberta Emergency Management Agency   *EMERGENCY SERVICES – as managed / operated by the Local Authority / Health Authority

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Lead Agency Roles

	Before the Incident	**During the Incident**	**After the Incident**
***OGC**	The Emergency Response and Safety Department is the lead department responsible for emergency management within the Commission. The Department oversees the administration of the EMR. This includes: ❏ Reviewing industry emergency management programs and plans ❏ Participating in permit holder emergency response exercises ❏ Providing 24 hour Emergency Officer services ❏ Leading emergency and incident follow-up and investigation ❏ Administering incident and complaint response services ❏ The Commission uses a combination of reviews, assessments, and field inspections. ❏ To ensure permit holders maintain compliance with the requirements detailed in the Emergency Management Regulation and the Oil and Gas Activities Act. The audit and inspection program objectives are to ensure permit holders have adequate processes and procedures in place. ❏ Participate in selected licensee ERP exercises. ❏ Maintain a 24 hour telephone contact where petroleum industry incidents can be reported.	During emergencies the Oil and Gas Commission (OGC) acts as a liaison between industry operators and the provincial emergency management structure to provide situation updates related to threatened oil and gas assets. ❏ Oversee operator's response to an incident. ❏ Notified by EMBC of incidents within OGC's jurisdiction (on lease). ❏ Establish communication with operator. ❏ Confirm incident level with operator. ❏ Confirm downgrade of incident level. ❏ Issue road closure order upon request from operator. ❏ Request NOTAM order upon request from the operator. ❏ May send an OGC representative to operator's On-Site Command Post and / or Evacuation Centre. ❏ May establish a government EOC at the OGC office. ❏ Confirm ignition decision with operator if time permits. ❏ Confirm media releases to be sent out by operator.	❏ Close EOC if established. ❏ Participate in event debriefings. ❏ Receive and review Post-Incident reports. ❏ May audit licensee records.
***EMBC**	❏ Assist the OGC with planning initiatives regarding petroleum industry emergency response as requested by the OGC. ❏ EMBC Northeast Region receives Industry Facility Emergency Response Plans. ❏ Participate in selected licensee ERP exercises when requested as time permits. ❏ Maintain a 24 "800" telephone contact where petroleum industry spill incidents can be reported. ❏ Maintain 24 hour emergency contact numbers for local governments and provincial emergency responders.	❏ ECC Victoria will notify the OGC on call Emergency Response Officer and initiate British Columbia's notification of government agencies including MOF, MOE, MOT, Health Unit, WorkSafe BC, affected municipalities and all other level of government and industry, depending on the level of "coding" (notification code 1,2,3 is determined by the Lead Agency MOE or OGC), depending on the code level Standard Operating Procedures (SOPs) in ECC will determine who is notified. ❏ Provide representatives to help coordinate provincial response as required.	❏ As requested by OGC

Local Authority / Regional Districts	❏ Set up and maintain an emergency management organization which can include an executive committee, emergency program management committee, emergency program coordinator or emergency social services director.
	❏ Develop and maintain a Hazard, Risk and Vulnerability Analysis (HRVA) to identify potential emergencies and disasters in its jurisdictional area.
	❏ Educate community residents and business owners about the need for personal emergency preparedness.
	❏ Prepare for emergencies and disasters through mitigation, preparedness, response and recovery planning.
	❏ Conduct training and exercises for all emergency response staff.
	❏ Establish procedures for implementing, reviewing and revising response and recovery plans.
	❏ Complete periodic reviews and updating of the local emergency plan.
	❏ Respond to emergencies when required.
	❏ Establish procedures for notifying persons threatened by emergencies or impending disasters.
	❏ Identify procedures for obtaining emergency resources.
	❏ Establish priorities for restoring essential services.
	❏ Work with volunteer groups to plan for the provision of food, clothing and shelter to victims.
	❏ Participate in industrial operators' preparatory training and exercises where possible.
	❏ Maintain 24 hour emergency contact numbers.
		❏ Provides the local government response for rural and crown areas.
		❏ Assesses the situation.
		❏ Provides support to the first responders, including resources.
		❏ Provides public information, including media briefings.
		❏ Coordinates the provision of food, clothing, shelter and transportation.
		❏ Liaises with volunteer groups.
		❏ Provides situation reports to the PREOC.
		❏ Tracks finances.
		❏ Coordinates recovery of essential services.
		❏ Coordinates community recovery efforts.
		❏ During emergencies and disasters the local authority's primary link to the provincial emergency management structure is the PREOC.
		❏ When a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC.
		❏ Establish contact with the industrial operator in order to:
		   ❏ Obtain additional hazard information.
		   ❏ Determine where roadblocks should be or are established.
		   ❏ Determine the direction of approach to the incident.
		   ❏ Determine if there are any injuries.
		   ❏ Find out what response and public protection actions have been taken.
		   ❏ Identify the location of the On-site Command Post (OSCP) and any Emergency Operations Centres (EOCs).
		❏ Activate the MEP, when required.
		❏ Manage the Local Authority's emergency response.
		❏ Activate the emergency public warning system to alert people to life threatening hazards, as required.
		❏ Activate the Municipal EOC (MEOC), as required.
		❏ May dispatch a representative to the Government EOC (GEOC), when it is established, to coordinate the response, if requested.
		❏ If necessary, declare a local State of Emergency.
		❏ When possible, work with all other responders to establish a single Regional EOC (REOC).
		❏ Inform EMBC and the public when the emergency is over.
			❏ Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.
			❏ Participate in multi-agency debriefings.

***BC Emergency Services**	The first level of emergency response is provided by fire and/or police services and may involve the activation of the Emergency Operations Centre (EOC). Other first responders, such as the RCMP and British Columbia Ambulance Service, have a provincial mandate but with a local presence through detachments or stations. These agencies are usually accessed through 9☐1☐1 and have internal dispatch arrangements. ❏ First responders work at the site level of an event and include police, fire and ambulance. Activities of first responders include medical response, firefighting and managing crowds or evacuation zones. ❏ When a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC. ❏ First response services provided by a fire department are determined by the local authority responsible, and may include hazardous material incident response, road rescue, and medical rescue. ❏ The BC Ambulance Service (BCAS) operates under the authority of the Emergency and Health Services Commission (EHSC) and is tasked with the provision of pre-hospital emergency care and transport of patients across the province. ❏ BCAS staff actively participates in emergency planning, mock emergency exercises and other joint training initiatives to ensure emergency preparedness and response resources are identified and deployed quickly and effectively when they are needed most. ❏ Participate in industrial operators' exercises where possible. ❏ Maintain 24 hour emergency contact numbers.	**RCMP** ❏ Maintain law and order and assist the operator with security. ❏ Assist with mobilization of additional resources as directed by EMBC. ❏ Assist with traffic control, evacuation, and residence security. ❏ Assist with setting up and maintaining roadblocks or closures of 1, 2 and 3 digit Provincial or Secondary highways. ❏ Establish and maintain communications with industrial operator. ❏ Dispatch a representative to the off-site Regional Emergency Operations Centre, when established, to coordinate the response. ❏ Coordinate with the industrial operator both the establishment and the administration of reception centres for evacuees. ❏ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans. **Fire** ❏ Respond to and assess emergency incident to the scope of their abilities. ❏ Establish a unified OSCP / ICP (On-site Command Post / Incident Command Post). ❏ Communicate to MEOC and provide site reps as required. ❏ Assist with fire protection where trained personnel are available. ❏ Provide emergency medical assistance, as required. ❏ Coordinate news releases with the licensee, if required. **EMS** ❏ Respond to and assess emergency incident to the scope of their abilities. ❏ The BC Ambulance Service provides and coordinates ambulance service s within British Columbia, including triage, treatment, transportation and care of casualties. ❏ The BC Ambulance Service provides situational awareness and coordinates resources through the PREOCs and PECC. ❏ Provide medical aid and transportation of ill or injured workers to a medical facility during high risk operations as required under the *WCB Act* and WSBC Regulations. ❏ Provide emergency medical assistance, as required.	❏ Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator. ❏ Participate in multi-agency debriefings.

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Lead Agency Roles

	Before the Incident	During the Incident	After the Incident
Northern Health Authority	Northern Health is the regional health authority responsible for providing health services to 300,000 people over an area of 600,000 square kilometers in the province of British Columbia. Services include: ❑ Acute (hospital) Care ❑ Public Health (Protection, Preventive and Population Health services ❑ Mental Health and Addictions ❑ Home and Community Care ❑ In the event of a major emergency/disaster, Northern Health will provide health care services within its capacity, and will activate its emergency response management plan(s). ❑ Participate with industry, local authority and other partners in the development of their Emergency Response Plans as it relates to health authority roles and responsibilities. ❑ Participate in stakeholder training and exercises associated with activation of an Emergency Response Plan, in which Northern Health or HEMBC have a role and responsibility.	❑ Activate internal emergency response management plans related to ongoing provision of its services ❑ Provide acute care and emergency services at existing Northern Health hospitals/health centres. ❑ Work with BC Emergency Health Services (Ambulance) and the BC Patient Transfer Network to transport patients to the appropriate levels of care. ❑ Apply and enforce the Public Health Act, and associated regulations. ❑ Provide advice/information to the stakeholders on the existing or potential public health effects of an incident (including drinking water safety, air quality, environmental contaminants, communicable disease prevention, re-occupancy of evacuated areas, etc.). ❑ Provide advice/information on the best methods for monitoring health effects from an incident. ❑ Assist in development of (joint) messaging for public information on emergency incidents. ❑ Provide guidance to stakeholders and local authorities on public health considerations in operating reception and evacuation centres, and group lodging facilities.	
Ministry of Justice	The Police and Community Safety Branch of the Ministry of Justice will work with EMBC to: ❑ Prepare, promulgate and implement orders relating to law enforcement and internal security. ❑ Provide through the jurisdictional police force: ❑ Advice to local authorities respecting the maintenance of law and order ❑ Reinforcement of local police services ❑ Security control of emergency areas; and ❑ Traffic and crowd control ❑ The Ministry of Justice provides legal services to the government. Policy direction and legislative changes are made in consultation with the Ministry of Justice. During emergencies or disasters the Ministry of Justice may be called on to assist with risk management and provide expertise. This could include providing advice to provincial ministries and government corporations on legal matters relating to the preparation and promulgation of emergency orders, regulations, declarations and contractual arrangements.	❑ Jurisdictional police forces to task search and rescue services for missing persons on land and in inland waters. ❑ Before, during and after an emergency the Ministry of Justice could be called upon to provide expertise, technical advice and/or policy direction regarding police and correctional services. ❑ The Minister of Justice has overall responsibility for emergency management in the province. In the event of a disaster, the Minister may: ❑ Declare a provincial state of emergency ❑ Make a formal written request for federal assistance or aid from the Government of Canada ❑ Direct the establishment of M-DEC ❑ Inform his/her colleagues of the situation, and ❑ Be available for media interviews	

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Government Consultation Summary

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		Alberta							
Type of Agency	**Agency Name**	**Provided Specific Roles**	**Agreed to Generic Roles**	**Unable to Contact**	**Willing to consider a single REOC**	**Evacuation outside of the EPZ**	**Location of EOC**	**Suggested Reception Centres**	**Notes**
Health Services	Alberta Health Services - Zone 5 Shane Hussey, Director - North	✓			Yes, where possible.	Require Assistance	Virtual	NA	-
Local Authority	Clear Hills County Audrey Bjorklund, Community Development Manager	✓			Yes, where possible.	Requires Assistance	313 Alberta Avenue, Worsley, AB	NA	-
Local Authority	County of Grande Prairie Dan Verdun, Fire Chief	✓			Yes, where possible.	Requires Assistance	10808 – 100th Ave Clairmont, AB	NA	-
Local Authority	M.D. of Greenview Wayne Brown, Regional Fire Chief		✓		Yes, where possible.	Coordinate Evacuation & Require Assistance	4806 – 36th Avenue, Valleyview, AB	NA	E2 Notification / Consultation
Local Authority	Saddle Hills County Brice Daly, Director of Community and Protective Services	✓			Yes, where possible.	Coordinate Evacuation	AB-49 & Highway Ave, Spirit River, AB	NA	-
RCMP	Fairview RCMP Greg Beach, Sergeant	-	-	-	-	-	-	-	E2 Notification Only

Government Consultation Summary

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British Columbia									
Type of Agency	Agency Name	Provided Specific Roles	Agreed to Generic Roles	Unable to Contact	Willing to consider a single REOC	Evacuation outside of the EPZ	Location of EOC	Suggested Reception Centres	Notes
Health Services	Northern Health Jim Fitzpatrick, Director	✓			Yes, where possible.	N/A	-	-	Northern Health has requested not to be consulted with
Local Authority	Emergency Management BC Heather MacRae, Regional Manager	✓			Yes, where possible	N/A	3235 Westwood Dr Prince George, BC	NA	-
Local Authority	Peace River Regional District Deborah Jones-Middleton, Protective Services Manager	✓			Yes, where possible	Coordinate Evacuation	810 Alaska Avenue, Dawson Creek, BC	NA	Roles are available and updated through regional district website.

Oil and Gas Industry Emergency Preparedness and Response

Alberta Health Services (AHS) - Environmental Public Health (EPH) roles and responsibilities in public health emergency preparedness and response to the oil and gas industry are outlined below. The provision of services during an emergency depends upon our assessment of legislative responsibilities, impact to services, and business continuity.

EPH will endeavor to:

- Participate with the Licensee in the development of their Emergency Response Plans as it relates to the Environmental Public Health Program's role and responsibility.

- Provide the AHS Zone Single-Point-of-Contact (SPOC) emergency phone number to enable the Licensee to notify and alert the Zone of an emergency. From the initial notification or alert, AHS emergency response will fan out to and coordinate with other AHS programs and facilities as necessary. The 911 EMS services remain independent of the Zone SPOC notification/alert process.

- Participate with stakeholders in preparedness training and exercises associated with a Licensee's simulated activation of an Emergency Response Plan in which EPH has a role and responsibility.

- Participate in public information sessions during the Licensee's Emergency Response Plan development process when appropriate and as resources allow.

- Provide guidance to stakeholders and local municipal authorities in identifying sites suitable for establishing and operating an evacuation centre and/or reception centre, including operational requirements.

- Provide guidance to stakeholders on substances that may affect public health in consultation with the Zone Medical Officer of Health (MOH), including Alberta Health Acute Exposure Health Effects for Hydrogen Sulphide and Sulphur Dioxide information.

- Conduct assessments, inspections and give regulatory direction, when appropriate, to ensure the requirements of provincial legislation and EPH program areas of responsibilities for public health protection and disease prevention are maintained.

- Notify the Zone Medical Officer of Health of any incident affecting or potentially affecting other AHS programs or facilities. The Zone MOH will notify and coordinate emergency response in other program areas and facilities as necessary.

- Establish EPH emergency management operations, when appropriate, to support regional response efforts and liaise with the Government Emergency Operations Centre, Municipal Emergency Operations Centre and/or Industry Emergency Operations Centre, if needed.

- Assist the Zone Medical Officer of Health, local municipal authority, and Public Information/Communication officers in the development, issuance, and rescinding of public health, public evacuation and shelter-in-place advisories.

- Provide guidance to stakeholders on matters relating to evacuation of the public and/or public facilities, and the re-occupancy of those evacuated areas or facilities.

- Record and respond to health complaints or concerns from the public during and following an incident.

- Participate in stakeholder debriefings as necessary.

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24 Hour Emergency Notification

████████████████████

Email: edp@ahs.ca
Use the phone number and email for all notifications across Alberta.

For more information, please contact your nearest Environmental Public Health office.

████████████████████████████   *Edmontonzone.environmentalhealth@ahs.ca*
                                 Calgaryzone.environmentalhealth@ahs.ca
                                 Southzone.environmentalhealth@ahs.ca
                                 Northzone.environmentalhealth@ahs.ca
                                 Centralzone.environmentalhealth@ahs.ca

www.ahs.ca/eph

CLEAR HILLS COUNTY ROLES

Clear Hills County must be contacted at a Level **1** Emergency if any members of the public are notified or road blocks are established on any County road(s) or numbered provincial highways. Clear Hills County must be contacted automatically at a Level **2** or **3** Emergency.

Please note: Clear Hills County will dispatch a representative to liaison with the Incident Commander/ Operations Chief at the Incident Command Post.

Responsibilities

- Initiates and manages the local disaster services response in accordance with County Policy.
- May dispatch representative(s) to the Government's Off-Site Emergency Operations Centre.
- Ensures all local emergency and public information services are available in accordance with County Policy. (Public Information Releases will be coordinated with the Companies Public Information Officer)
- If required, activates Municipal Emergency Operations Centre (MEOC) and coordinates activities at this centre. The MEOC is available to the Company for use as a REOC subject to limitations as may be imposed by Clear Hills County due to current operational requirements at the time.
- Upon request, may assist with set-up and administration of Reception Centre.
- May assist with arrangement of temporary accommodations for residents who have been evacuated in accordance with County Policy.
- May assist with set up and maintenance of road blocks in accordance with County Policy.
- May assist with Fire Protection in accordance with County Policy in areas where accessible.
- If necessary, may declare a local state of emergency to provide local authorities with special powers.
- Supports the Company in dealing with the emergency in accordance with County Policy.

Resources

There is 1 County Fire Department, located at Worsley and 3 Fire Departments on contract from Hines Creek, Fairview and Berwyn for the Hines Creek and east area, each with approximately 20 volunteer firefighters.

Please note: The Fire Departments are not equipped for Industrial Fire Protection and would be responsible for anything off-site or outside the Emergency Perimeter Zone (EPZ). Some Fire Department resources may be useful for on-site actions such as Water Tanker Trucks, Portable Tanks, etc. and may be made available if requested. Certain areas of Clear Hills County have limited access or are extremely remote from any Fire Station.

Alberta Sustainable Resource Development - Peace Wildfire Management Area is responsible for Wildland Fire Protection in these areas. The County has no Special Constables. All policing duties are covered by the RCMP - Fairview Detachment. The Public Works Department employs about 6 personnel, which expands to 20 employees during the summer.

Emergency Medical Services are under Alberta Health, dial 911.

County of Grande Prairie No. 1

Revised July 15, 2021

Contact information:

Name	Title	Office #	Cell #	E-mail
	Fire Chief **(Primary)**			
	Deputy Fire Chief			
	Deputy Fire Chief			
	Director Emergency Management			
	Deputy Director Emergency Mgmt.			

Initial contact person for ERP's for the County of Grande Prairie No. 1 is Dan Verdun Fire Chief.

Responsibilities

The *Emergency Services Act* requires the local authority of each municipality to be responsible for Emergency Response Planning and for the direction and control of their emergency response in their respective jurisdiction (*Local Authority*).

The Local Authority:

- Review the Site specific Emergency Response Plan
- Initiates and manages the local municipal disaster services response
- Dispatches representative(s) to the Emergency Operations Centre, when established and as required
- If required, activates their municipal emergency operations centre and coordinates municipal activities at this centre
- Upon request, may assist with setting up and administration of the Reception Centre.
- Assists with the arrangements of temporary accommodations for residents who have been evacuated
- Assist with the establishing, set up and maintenance of roadblocks as resources and staff training permit
- Ensures that if available, local emergency services and resources are available to the level that they are trained
- Assists with off-site fire protection
- Activates the Emergency Public Warning System (EPWS) to alert public to life threatening hazards as required according to criteria set out by AEMA
- Supports operator in dealing with the emergency situation
- Initiate public protection methods as required
- If necessary, declares a local state of emergency to provide local authorities with special powers (mandatory evacuation, use of or entry into private property, conscription, demolition of private property structures for safety reasons, etc), and
- Establish a public information service, including use of the news media to inform and instruct the public of the emergency as required
- Assist as required with post incident damage assessment

County of Grande Prairie No. 1

Revised July 15, 2021

Resources

- The County has and may provide equipment and manpower in an <u>offsite support</u> role for fire protection and emergency mitigation. No County Fire personnel will work outside of their scope of practice. All County personnel will remain under immediate control and direction of a County Fire Officer or designate. The County Fire Service is manned 24 hours a day from the Clairmont and Dunes Fire Halls. All other stations in the County service area are Paid Response or Volunteer and will be dispatched through 911.

- The County has uniformed Level 1 Peace Officers. The RCMP performs all other policing, evacuation and notification duties. The Peace Officers would be mobilized at the request of the RCMP.

- The County has a large Public Works Department (divided into 3 zones), affiliated equipment and vehicles, and a staff that ranges from 140 in the winter to 240 in the summer. Manpower and equipment may be available to assist with roadblocks and county road closures depending on training and availability.

County of Grande Prairie Notification 24 hr. Phone Number ▮▮▮▮▮▮

For all Emergencies Dial   911

LOCAL AUTHORITY – M.D. OF GREENVIEW

Resources would be provided in support of an upstream emergency on an "as available" basis and in accordance with Local Authority Policy.

Before the Event

- ❑ Work with the upstream operator to effectively prepare for an upstream petroleum industry incident. Provide input to the industrial operator's site-specific plan to ensure it is compatible with the Municipal Emergency Plan (MEP) where feasible.
- ❑ Participate in industrial operators' preparatory training and exercises where possible.
- ❑ Train personnel to carry out functions as assigned by MEP or procedures.
- ❑ Maintain 24-hour emergency contact numbers.

Upon the Notification of and during an Event

- ❑ Establish contact with the industrial operator in order to *(the following roles/responsibilities are entirely contingent upon the communication of accurate and timely information from the industrial operator to the MD of Greenview):*
  - ❑ Obtain additional hazard information.
  - ❑ Determine where roadblocks should be or are established.
  - ❑ Determine the direction of approach to the incident.
  - ❑ Determine if there are any injuries.
  - ❑ Find out what response and public protection actions have been taken by the upstream operation.
  - ❑ The location of the On-site Command Post (OSCP) and any Emergency Operations Centres (EOCs).
- ❑ Activate the MEP, when required.
- ❑ Manage the Local Authority's emergency response.
- ❑ Activate the Municipal EOC (MEOC), as required.
- ❑ Initiate public protection measures, as necessary.
- ❑ If necessary, declare a State of Local Emergency.
- ❑ When possible work with all other responders to establish a single Regional EOC (REOC).
- ❑ Establish a public information service *on behalf of the MD of Greenview*, including the use of the news media to inform and instruct the public of the emergency and of any protective actions to be taken.
- ❑ Provide timely news releases *on behalf of the MD of Greenview*, if required.
- ❑ *If a State of Local Emergency has been declared*, inform AEMA and the public when the emergency is over.

After the Event

- ❑ Participate in multi-agency debriefings.

Emergency Services (as managed / operated by the Local Authority)

Emergency Services will also, as a general rule, provide resources in support of a petroleum incident, on an "as available" basis.

Before the Event

- ❑ Maintain readiness status for emergency notification.
- ❑ Participate in industrial operators' exercises where possible.
- ❑ Maintain 24-hour emergency contact numbers.

During the Event

- ❑ Respond to and assess emergency incident to the scope of their abilities.
- ❑ Establish a unified OSCP / ICP (On-site Command Post / Incident Command Post).
- ❑ *As available technology allows*, communicate to MEOC and provide site reps as required.
- ❑ Assist with fire protection where trained personnel are available.
- ❑ Provide emergency medical assistance, as required*, understanding that Alberta Health Services is primarily responsible for ground ambulances in the Peace Country Health region.*
- ❑ Provide timely news releases *with respect to the MD of Greenview*, if required.

After the Event

- ❑ Participate in multi-agency debriefings.

MUTUAL AID UNDERSTANDING
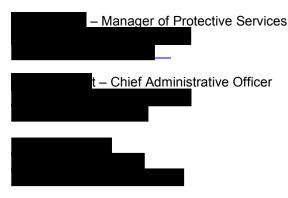
Emergency Notification of Saddle Hills County:
Saddle Hill County must be contacted at a Level 1 Emergency if any members of the public are notified or road blocks are established on any County road(s) or numbered provincial highways.
Saddle Hill County must be contacted automatically at a Level 2 or 3 Emergency.
Please note: Saddle Hills County will dispatch a representative to liaison with the Incident Commander or Operations Chief at the Company Regional Emergency Operations Centre (REOC), Incident Command Post or On Site Command Post as appropriate depending on the location.

Emergency Contacts

███████ – Manager of Protective Services
███████████

███████ – Chief Administrative Officer
███████████

███████████

County Office (780) 864- 3760 (weekdays only)

Public Information Officer

███████

███████

███████

Please Note: The office number is weekdays only.

All Emergency Services
Police, Fire, Ambulance
Dial 9-1-1

Grande Prairie (9-1-1) Dispatch Centre
███████████ (answered as 9-1-1 call)

Alberta Agriculture & Forestry – Grande Prairie Wildfire Management Area
Duty Officer - ███████ (Fire Centre – GP)
███████

310-Fire -Fire Centre - Edmonton

Saddle Hills County is a member of: *Central Peace - Regional Emergency Management Agency* along with Birch Hills County, MD of Spirit River, Town of Spirit River and Village of Rycroft. This partnership enables a seamless response a throughout the Central Peace Region.

Responsibilities

- Initiates and manages the local Emergency Management response in accordance with County Policy.
- May dispatch representative(s) to the Company's Incident command Pos t(ICP) or Regional Emergency Operations Centre
- Ensures all local emergency and public information services are available in accordance with County Policy. (Public Information Releases will be coordinated with the Companies Public Information Officer to ensure consistency of key messages)
- If required, activates Central Peace - Regional Emergency Operations Centre and coordinate activities at this centre. The Central Peace - Regional EOC, located the Saddle Hills County office at NW9 – 79 – 8 – W6 is available to the Company for use as a REOC subject to limitations as may be imposed by Saddle Hills County due to operational requirements at the time of an incident.
- Upon request, may assist with set-up and administration of a Reception Centre.
- May assist with arrangement of temporary accommodations for residents who have been evacuated in accordance with County Policy.
- May assist with set up and maintenance of road blocks and detours in accordance with County Policy.
- May assist with Fire Protection in accordance with County Policy in areas where accessible.
- If necessary, may declare a "State of Local Emergency" to provide local authorities with special powers.
- Supports the Company in dealing with the emergency in accordance with County Policy.

Resources

Fire Departments - There are 5 County Fire Departments, located at **Bonanza, Blueberry, Happy Valley, Savanna & Woking** and 1 Fire Department on contract from **Tomslake, BC for the Gundy area**, each with approximately 15 - 25 volunteer fire fighters.

Please note:
The Fire Departments are not equipped for Industrial Fire Protection and would only be responsible for anything off-site or outside the EPZ. Some Fire Department resources may be useful for on-site actions such as Water Tanker Trucks, Portable Tanks, etc and may be made available if requested.

Certain areas of Saddle Hills County have limited access or are extremely remote from any Fire Station, **Alberta Agriculture & Forestry** – GP Wildfire Management Area is responsible for Wildland fire protection in these areas

Police - The County currently has 1 Community Peace Officer. Most policing duties are covered by the Spirit River RCMP.

Public Works – The County Public Works Department employs about 20 personnel, which expands to 30 employees during the summer.

Emergency Medical Services are provided by Alberta Health Services - EMS, however, Saddle Hills County does have

Medical First Responders (trained and equipped to an FMR level) in areas of the County that are remote from the Ambulance Station in Spirit River. They are automatically dispatched to all ambulance calls in their area.

Emergency Social Services – The Central Peace – Emergency Social Services Group can provide assistance with registration and inquiry services as well as arranging for sheltering and other requirements as may be needed by evacuees.

Regional Emergency Operations Centre – 16 work stations (2 people each) with phone; data; & wifi capability.

(Whenever possible please send ERPs in electronic format/ USB or E-mail only)   *2019/10/23*

Safe   Strong   Sustainable

71977 Range Road 84 • Junction of Hwy 49 and 725 • P: (780) 864-3760 • F: (780) 864-3904 • www.saddlehills.ab.ca
Mailing Address: RR 1 Spirit River, AB   T0H 3G0

Emergency Response
Roles & Responsibilities

Health Emergency Management BC, North (HEMBC)

HEMBC is a program under the Provincial Health Services Authority (PHSA). HEMBC provides the expertise, education, tools, and support specifically for the BC Health Sector to effectively mitigate, prepare for, respond to, and recover from the impacts of emergency events; ensuring the continuity of health services. There is a HEMBC team in each BC health authority. HEMBC-North deals specifically with Northern Health.

Roles and responsibilities:
- Maintain a 24-hour emergency/on call contact number for notification and activation of the health system in Northern BC (appendix I)
- Notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the incident/emergency event.

Northern Health Authority (NH)

Northern Health is the regional health authority responsible for providing health services to 300,000 people over an area of 600,000 square kilometers in the province of British Columbia. Services include:
- Acute (hospital) Care
- Public Health (Protection, Preventive and Population Health services)
- Mental Health and Addictions
- Home and Community Care

In the event of a major emergency/disaster, Northern Health will provide health care services within its capacity, and activate its emergency response management plan(s).

NH Roles & responsibilities - <u>PREPAREDNESS (PRE-EVENT):</u>
- Participate with industry, local authority and other partners in the development of their Emergency Response Plans as it relates to health authority roles and responsibilities:
- Participate in stakeholder training and exercises associated with activation of an Emergency Response Plan, in which Northern Health or HEMBC have a role and responsibility (as resources allow);

NH Roles & responsibilities - <u>RESPONSE:</u>

- Activate internal health emergency management plans related to ongoing provision of services (listed above);
- Provide acute care and emergency services at existing Northern Health hospitals/health centres;
- Work with BC Emergency Health Services (Ambulance) and the BC Patient Transfer Network to transport patients to the appropriate levels of care;
- Apply and enforce the Public Health Act, and associated regulations;
- Provide advice/information to the stakeholders on the existing or potential public health effects of an incident (including drinking water safety, air quality, environmental contaminants, communicable disease prevention, re-occupancy of evacuated areas, etc.);
- Provide advice/information on the best methods for monitoring health effects from an incident.
- Assist in development of (joint) messaging for public information on emergency incidents;
- Provide guidance to stakeholders and local authorities on public health considerations in operating reception and evacuation centres, and group lodging facilities

NOTE: British Columbia Emergency Health Services (BCEHS - Ambulance) remains independent of Northern Health. If an ambulance is required please contact BCEHS via 911 (or the local contact number, if 911 is not available in your area).

Appendix I

Contact information:

- **For Emergency events that require immediate connection with Northern Health, please call :**
  - HEMBC **on call number (24/7) 1-855-554-3622**
    - o HEMBC will notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the event/emergency.
    - o **Please include this number in industry ERPs, for the use of permit holders in contacting Northern Health on an emergency basis.**
    - o **Do NOT** include this number on Public Awareness Pamphlets for individual projects; the EMBC/Oil and Gas Commission's emergency number(s) is more appropriate, and the HEMBC 24/7 number is on record with those agencies.

- **For non-urgent requests or emergency exercise planning/information,** contact HEMBC North Director ████████████████
  - o ███████████████████
    ████████████████████h.ca

- **Please note that Northern Health does not review or approve emergency response plans** (ERPs) unless there is a request made from the regulators or governing agencies (e.g. Oil and Gas Commission, National Energy Board, Ministry of Environment, Environmental Assessment Office, etc.). Northern Health also does **not require that general stakeholder consultation/notification packages** be sent to Northern Health.

- **Please make your site and project ERPs available to Northern Health in the event of an emergency to:** HEMBC@northernhealth.ca

- For Environmental assessment inquires and general government consultation questions pertaining to health please email the NH Office of Health and Resource Development at: resource.development@northernhealth.ca
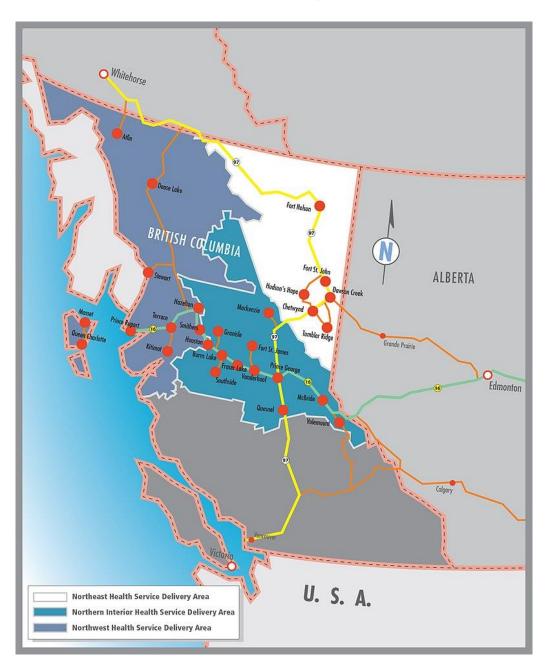
Appendix II

Northern Health Geography

EMERGENCY RESPONSE ROLES & RESPONSIBILITIES

<u>**Before An Emergency**</u>
- Assist the OGC with planning initiatives regarding upstream petroleum industry emergency response as requested by the OGC
- EMBC Northeast Region receives Industry Facility Emergency Response Plans.
- Participate in selected licensee ERP exercises when requested as time permits.
- Maintain a 24-hour 800 telephone contact where petroleum industry spill incidents can be reported.
- Maintain 24-hour emergency contact numbers for local governments and provincial emergency responders.

<u>**During an Emergency**</u>
- ECC Victoria will notify the OGC on call Emergency Response Officer and initiate British Columbia's notification of government agencies including MOF, MOE, MOT, Health Unit, WorkSafe BC, affected municipalities and all other level of government and industry, depending on the level of "coding" (notification Code: 1,2,3 is determined by the Lead Agency MOE or OGC); depending on the code level Standard Operating Procedures (SOP's) in ECC will determine who is notified).
- Provide representatives to help coordinate provincial response as required.

<u>**After an Emergency**</u>
- As requested by OGC.

Local Authority (Regional District)

Peace River Regional District (PRRD) has a formal Emergency Management Plan, which outlines the measures and sources of assistance that can be obtained to support emergency response efforts, within their jurisdictional boundaries. Upon request from the BC Oil & Gas Commission (BCOGC), the Regional District may address emergency response capabilities, expectations and preparedness. If required or requested the Regional District may activate their emergency plan in order to achieve any of the following:

- Work with the BCOG's Emergency Operations Centre (EOC) if established
  - With remote support as a cooperating agency through the BCOGC Liaison Officer and/or,
  - In the BCOGC operations section as an assisting agency
- Provide support and assistance to ensure notification of endangered area residents
  - Mass Alerting
  - Notifications
- Provide support to coordinate the delivery of Emergency Support Services (ESS) to evacuated or effected residents
- If necessary, declaration of a State of Local Emergency to enact legislative powers including but not limited to:
  - Issuance of Evacuation Alerts, Orders and Rescinds (persons, livestock, and animals);
  - Acquire or use any land or personal property considered necessary to prevent, respond or alleviate the effects of an event (following BCEMS Model); and
  - Control or Prohibit Travel in the region for safety
- Assist with public information service (joint, BCOGC, Industry and local government)
- Assist with the provision of building re-entry procedures jointly with utility providers, industry, Northern Health, and Technical Safety BC.

Revised November 13, 2020

diverse. vast. abundant.

Supporting Agency Roles

	Before the Incident	During the Incident	After the Incident

Common Tasks	❑ All departments/agencies should participate in training and exercises for this plan and the Energy Resources Industry Emergency Support Plan (ERIESP).
	❑ This plan will be reviewed as required.
	❑ A join multi-department/agency exercise will be held as required.
		❑ The AER may activate the ERIESP based on the following criteria:
		  ❑ Level 2 or 3 emergencies (as defined by the AER)
		  ❑ Any level of emergency:
		    ❑ requires coordination of multi-agency response;
		    ❑ requires coordination of information and communication between departments/agencies and/or has significant provincial/national media interest.
		❑ Elevations of the POC will be escalated by AEMA. Once the elevations level of the POC has been escalated, provincial-level emergency control will be coordinated by AEMA under the leadership of the lead agency.
		❑ The AER will develop emergency objectives to guide the GoA response and support to duty holders and local authorities. AEMA will assist the AER by providing leadership and strategic policy direction for the GoA as per the *Government Emergency Management Regulation (AR 248/2007).*
		❑ GoA emergency management assistance will be provided to the local authority as requested and as long as is required by the local authority.
			❑ Complete a Post Incident Assessment (PIA) based on the scope of their involvement and the outcome.
			❑ Integrate PIA into internal response processes.
			❑ All departments/agencies will participate in a joint PIA to be coordinated by AER. Participation from each department/agency will be determined by the response to the emergency.
			❑ Reports required by other regulatory authorities must be completed and delivered to the appropriate regulatory body within the time lines they prescribe.

*OHS	❑ Maintain and provide resources to support 24\7 employer reporting of incidents to OHS. ❑ Maintain capacity for OHS attendance to a work site when warranted.	❑ Inspect the work activities and processes to ensure legislative standards are being met by all work site parties. (Attendance to be determined by Occupational Health and Safety management.)	❑ Ensure work site parties have implemented appropriate controls prior to re-entry by workers. ❑ Investigate the incident if the incident is a reportable incident in line with current Alberta OHS Legislation. ❑ Ensure internal investigation has been conducted and that identified corrective actions have been minimized to reduce recurrence of similar incidents. ❑ Ensure health and safety committee or health and safety representative as defined by OHS legislation has been involved in internal investigations.
*AAF	❑ Act as subject matter expert (SME) relating to agriculture and livestock impacts. ❑ Act as the liaison between farming/ranching community and the Government of Alberta (GoA). ❑ Maintain emergency response resources.	**Agriculture** ❑ Act as SME relating to agriculture and livestock impacts. ❑ Act as the liaison between farming/ranching community and GoA during energy resources industry emergencies. ❑ Provide information relating to agricultural and livestock impacts to the GoA during energy resources industry emergencies. **Forestry** ❑ Notify forestry staff in the area of the emergency. ❑ Forest Areas Wildfire Coordination Centres will notify duty holder if energy resources industry infrastructure is threatened by wildfire, where practical and in order of priority. Priority contact will be through the contact information indicated in the company's Industrial Wildfire Control Plan for the identified locations. Can fight wildfires started as the result of the energy resources industry product release. ❑ Alberta Wildfire is responsible for managing all wildfires within the Forest Protection Area. Will suppress wildfires caused from industry operations when industry has appropriately shut-in the operation and notified Alberta wildfire to ensure the safety of first responders.	**Agriculture** ❑ Provide a summary of agriculture and livestock impacts during the PIA process. (if applicable) ❑ Conduct agriculture and livestock impact assessments. ❑ Implement response activities as required. **Forestry** ❑ Conduct forest impact assessment. (if applicable)
*AT	❑ Maintain a 24/7 call centre (EDGE - Environmental and Dangerous Goods Emergencies) to receive emergency calls related to the transportation and handling of dangerous goods as well as environmental spills/releases/incidents, and AER emergency notifications. ❑ Act as SME for dangerous goods incidents.	❑ Handle inter-departmental communication as needed during energy resources industry emergencies. ❑ Maintain ability to process calls for new emergencies. ❑ Provide information on the impacts to transportation routes. ❑ Provide response support if dangerous goods are released.	❑ Provide a summary of transportation impacts during the PIA process. (if applicable)
*CPE	❑ Maintain a team of trained Communications and Public Engagement personnel. ❑ Activate crisis communications plan and crisis communications response.	❑ Confirm distribution of AER messaging. Provide support as required.	❑ Participate in all PIAs related to the ERIESP. ❑ Coordinate key messaging with the AER.
*JSG	❑ Maintain the list of Critical Infrastructure and key assets in the Province of Alberta. ❑ Maintain and regularly test the Emergency Notification System. ❑ Maintain awareness of threats, vulnerabilities, and risks related to human induced intentional hazards.	❑ Provide intelligence and threat risk assessments when appropriate and when requested, in relation to critical infrastructure and key assets. ❑ Communicate with owners and operators of critical infrastructure and key assets, through normal communication channels, or if necessary through the Emergency Notification System maintained by ASSIST.	❑ Participate in all PIAs related to the ERIESP. ❑ Communicate with owners and operators of critical infrastructure and key assets, through normal communication channels, or if necessary through the Emergency Notification System maintained by ASSIST.
*ABSA	❑ Review, accept and register pressure equipment designs and construction procedures that relate to pressure equipment. ❑ Issue certificate of inspection permits for pressure equipment before the equipment is placed into service. ❑ Ensure that regular inspections of in-service pressure equipment are conducted. ❑ Keep records for pressure equipment that has been registered for use, or manufactured, in Alberta. ❑ Examine, certify and register Pressure Welders and Welding Examiners, Power Engineers, and Pressure Equipment Inspectors. ❑ Authorize and monitor, through quality management systems, organizations that have been permitted to conduct some of the activities subject to the regulations. ❑ Conduct safety education and training.	❑ Receive notification of an incident. ❑ As required under the *Pressure Equipment Safety Regulation* Section 35, the accident scene **must not be disturbed** (except when it is absolutely necessary to prevent death or injury, or to prevent further property damage) **unless** approval to do so has been given by an ABSA Safety Codes Officer.	❑ Investigate accidents or unsafe conditions that involve pressure equipment. May: ❑ close all or part of the accident site for 48 hours (or longer if authorized by a Justice) ❑ prohibit any person from entering the site for safety reasons or to preserve evidence ❑ be accompanied by any person for assistance ❑ inspect and photograph any thing ❑ require any person to make full disclosure ❑ require closure or disconnection of any thing ❑ require to be performed any tests or evaluations ❑ remove evidence ❑ require production of documents

H2Safety

Alberta

Supporting Agency Roles

Before the Incident

*AEP

- Maintain 24 hour emergency contact numbers and duty officer where resources can be accessed for a response related to this plan.
- Maintain emergency response resources.
- Maintain a specialty air monitoring team and equipment used to oversee and verify air monitoring during incident response.
- Act as SME.
- Prepare to act as lead agency when appropriate.

*WCB

The Workers' Compensation Board is a statutory corporation created by government under the Workers' Compensation Act to administer a system of workplace insurance for the workers and employers of the province of Alberta.

- WCB has the overall responsibility for the administration of the workers' compensation system in Alberta.
- Be a neutral and autonomous administrator of the worker's compensation system.
- Strive to balance the interests of workers and employers.
- Delivery of workers' compensation services to the workers and employers of Alberta.
- Make decisions based on evidence, law and policy and fair, impartial and transparent processes.
- Encourage safer workplaces and promote disability management.

During the Incident

*AEP

- Ensure that non-energy industry resources environmental impacts are mitigated.
- Provide expertise to mitigate the impacts of non-energy resources industry liquid releases on land and into watercourses.
- Provide technical assistance related to emergency drinking water supply engineering.
- Notify Fish and Wildlife staff in the area of the emergency.

*WCB

Employer must report to WCB within 72 hours of being notified of an injury/illness that results in or will likely result in:

- Lost time or the need to temporarily or permanently modify work beyond the date of accident
- Death or permanent disability (amputation, hearing loss, etc.)
- A disabling or potentially disabling condition caused by occupational exposure or activity (poisoning, infection, respiratory disease, dermatitis, etc.)
- The need for medical treatment beyond first aid (assessment by a physician or chiropractor, physiotherapy, etc.)
- Medical aid expenses (dental treatment, eyeglass repair/replacement, prescription medications, etc.)

Note: Immediately report fatalities and serious injuries to the OHS Contact Centre 1-866-415-8690.

- Determines whether the injury or illness is caused by work.
- Responds to all client inquiries forwarded by the Minister and all other elected officials.

After the Incident

*AEP

- Compile and maintain environment/emergency related records
- Monitor environmental recovery, when required.

*WCB

- Compensates injured workers for lost income, health care and other costs related to a work-related injury.
- Safely restores injured workers through return-to-work services to a level of competitive employability.
- Take reasonable measures to maintain a reasonable quality of life for severely injured workers through the provision of services allowed by legislation and policy.

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*WCB - Workers' Compensation Board   *AEP - Alberta Environment & Parks

Revised November 2021

H2Safety

Supporting Agency Roles

Ministry of Environment

Before the Incident
- Provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking appropriate actions.

Can liaise with MFLNRO to provide:
- Species and ecosystem protection policy.
- Water protection and sustainability policy
- Conservation and resource management enforcement

During the Incident
Before, during and after an emergency the Ministry of Environment could be called upon to provide expertise, technical advice and/or policy direction regarding:
- Environmental emergency response (including hazardous materials)
- Air, land and water quality standards
- Pollution prevention and waste management
- Water and air monitoring and reporting
- Environmental assessment
- Environmental monitoring
- Parks, wilderness and protected areas.
- Provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking appropriate actions.
- May provide a representative to the Incident Command Centre, the Off-Site Command EOC and the OGC Emergency Operations Centre (EOC) and / or the Provincial Emergency Operations Centre (PREOC) on a 24-hour basis.
- In a larger scale incident, based on risk, additional ministry resources such as IMTs (Incident Management Teams) may be deployed to establish unified command and monitor, augment, or take over the response if the RP fails to take appropriate action as deemed necessary by the EERO or Provincial Incident Commander.
- May assist the RP to ensure that other required agencies and affected stakeholders are contacted.
- May provide assistance with hazardous waste management.
- May conduct sampling for monitoring and enforcement purposes.

After the Incident
(none)

*MFLNRO

Before the Incident
- Five key agencies are housed within the Ministry of Forests, Lands and Natural Resource Operations: Wildfire Management Branch, Dam Safety, Flood Safety, GeoBC and the River Forecast Centre.
- Develop, deliver and promote innovative and effective wildfire management practices to clients.
- Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- The Ministry of Forests, Lands and Natural Resource Operations is identified to provide personnel, equipment, supplies, telecommunications equipment, aviation support and weather information to assist in emergency response operations.
- The Ministry of Forests and Range is the designated key agency for wildfires.

During the Incident
Before, during and after an emergency the Ministry of Forests, Lands and Natural Resource Operations could be called upon to provide expertise, technical advice and/or policy direction regarding:
- Forest stewardship policy
- Land use planning
- Water use planning and authorizations
- Drought management
- Dam and dike safety and regulation
- Flood plain management
- GeoBC and information management
- Pests, disease, invasive plants and species
- Wildfire management

After the Incident
- Participate in event debriefings.
- Complete a "lessons-learned" process based on the scope of their involvement and the outcome.

*MOTI

Before the Incident
- Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- In the event of an emergency, the Highway Department's Operations, Maintenance and Re-construction team plays an important role to ensure the public is safe and transportation routes are available for accessing emergency services.
- Ministry of Transportation and Infrastructure oversees provincial highways identified as emergency response routes - a network of pre-identified routes that can best move emergency services and supplies to where they are needed in response to a major disaster.
- Disaster Response Routes (DRRs) are a critical part of the overall emergency transportation system.
- Responsible for the construction, maintenance and operation of public roads.

During the Incident
Before, during and after an emergency the Ministry of Transportation and Infrastructure (MoTI) could be called upon to provide expertise, technical advice and/or policy direction regarding:
- Highway construction and maintenance
- Safety and protection of provincial road and bridge infrastructure
- Transportation planning and policy
- MoTI can:
  - Authorize the closure of provincial transportation routes, including highways and inland ferries, where the safety of the public is at risk.
  - Assist in public notification through the DriveBC website, as well as posting advisories on overhead message boards along designated routes.
  - Coordinate and arrange for transportation, engineering and construction resources.
  - Rebuild and restore provincial highways that are impacted by an emergency.

After the Incident
- Work with appropriate local and federal entities to facilitate the restoration of roadways and utilities.

*PSPC

Before the Incident
The Roles & Responsibilities listed below for Public Services and Procurement Canada (PSPC) are only in relation to the Alaska Highway (97) in British Columbia, north of mile 83.5 (km 133) to the border of British Columbia and Yukon Territories at km 968.

In conjunction with the BC Ministry of Transportation & Infrastructure (MOTI) and the provincial maintenance contractor, PSPC may:
- Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- Hold responsibility for the acquisition of contracts for the maintenance and operation of the Alaska Highway.
- Oversee Alaska Highway response routes - a network of pre-identified routes that can best move emergency services and supplies to where they are needed in response to a major disaster.

During the Incident
In conjunction with the BC Ministry of Transportation & Infrastructure (MOTI), PSPC, and the provincial maintenance contractor may be called upon to:
- Provide expertise, technical advice and/or policy direction regarding:
  - Highway construction and maintenance
  - Safety and protection of provincial road and bridge infrastructure
  - Transportation planning and policy
- Play an important role to ensure the public is safe and transportation routes are available for accessing emergency services.
- Assist in the coordination of roadblock locations along the highway.
- Authorize closure of the Alaska Highway where the safety of the public is at risk.
- Assist in public notification of an emergency through the MOTIs DriveBC website, as well as posting advisories on overhead message boards along designated routes.
- Coordinate and arrange for transportation, engineering and construction resources.
- Handle inter-departmental communication as needed during energy resources industry emergencies.
- Maintain ability to process calls for new emergencies.
- Provide information on the impacts to transportation routes.
- Provide response support if dangerous goods are released.

After the Incident
- Work with appropriate local and federal entities to facilitate the restoration and re-opening of the Alaska Highway.
- Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.
- Provide a summary of transportation impacts during the post incident review process.
- Participate in multi-agency debriefings.

Technical Safety BC

Before the Incident
- Technical Safety BC (formerly BC Safety Authority) is an independent, self-funded organization mandated to oversee the safe installation and operation of technical systems and equipment across the province.
- In addition to issuing permits, licenses and certificates, we work with industry to reduce safety risks through assessment, education and outreach, enforcement, and research.

During the Incident
- Technical Safety BC implements a business continuity plan in the event of a natural disaster. This plan ensures that Technical Safety BC resumes safety services as soon as possible.
- Though Technical Safety BC is not a first responder, they will provide technical support including inspection services to the recovery team relating to the technical equipment and systems covered by the Safety Standards Act (e.g., gas, electrical, elevating devices, boiler and pressure vessel technologies) after first ensuring the safety of its employees.
- Starting in the planning phase and through collaboration with other agencies, Technical Safety BC can provide most value to the public and best support the other agencies.

After the Incident
- Technical Safety BC tracks and investigates incidents and hazards that are reported to inform awareness and prevention initiatives
- Technical Safety BC does not investigate all reported incidents and may not follow-up with a notification unless there is an intention to investigate.
- Technical Safety BC will contact duty holders within 24 hours of the next regular business day following the report of an incident if more information is required or an investigation is planned to occur.

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Supporting Agency Roles

	Before the Incident	**During the Incident**	**After the Incident**

Ministry of Health	❐ Provide public health measures, including epidemic control and immunization programs.
	❐ Provide and coordinate ambulance services and triage, treatment, transportation and care of casualties.
	❐ Provide the continuity of care for patients evacuated from hospitals or other health institutions and for medically dependent patients from other care facilities.
	❐ Provide standard medical units consisting of emergency hospitals, advanced treatment centres, casualty collection units and blood donor packs.
	❐ Monitor potable water supplies.
	❐ Inspect and regulate food quality with the assistance of the Minister of Agriculture.
	❐ Provide critical incident stress debriefing and counselling services.
	❐ Provide support services for physically challenged or medically disabled people affected by an emergency.
	❐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
	❐ Provide input on public health issues related to a petroleum incident.
		Before, during and after an emergency the Ministry of Health could be called upon to provide expertise, technical advice and/or policy direction regarding:
		    ❐ Health service delivery
		    ❐ Public health planning and response
		    ❐ Community and home support services
		    ❐ Mental health
		    ❐ Communicable disease prevention
		❐ During an emergency the Ministry of Health will provide the continuity of care both for patients evacuated from hospitals or other health institutions and for medically dependent patients from other care facilities; The Ministry will also provide emergency psychosocial services.
		❐ Ensure appropriate Health entities have been notified of the incident.
		❐ Ensure appropriate Executive and Public Health personnel have been notified of the incident.
		❐ Carry out evacuation of medically dependent and vulnerable populations, as needed.
		❐ Transport incident casualties as required.
		❐ Triage and provide medical care to incident casualties as required.
		❐ Decontaminate incident casualties that present to health care facilities, as needed.
		❐ Relay health hazard information to the public.
		❐ Monitor water and air quality, as it relates to public health.
		❐ Coordinate the public health response to the incident.
		❐ Address the psychosocial aspects of the aftermath of an event.
		❐ Arrange with Health Canada and the Public Health Agency of Canada for federal support, if needed.
			❐ Participate in event debriefings.
			❐ Complete a "lessons-learned" process based on the scope of their involvement and the outcome.
			❐ Continue with public health and environmental health monitoring as required.
			❐ Continue to address the psychosocial aspects of recovery.

WorkSafeBC	WorkSafeBC is the BC Health and Safety Regulator. In addition to providing a no-fault insurance system and providing when work-related injuries or diseases occur compensation and support to workers in their recovery, rehabilitation, and safe return to work; WorkSafeBC assists workers in creating and maintaining healthy and safe work workplaces, with Proactive roles which include: ❐ Providing health and safety information to employers, workers, and the public ❐ Establishing standards and guidelines for occupational health and safety ❐ Educating employers, supervisors, and workers on prevention of work-related injury and illness. ❐ Conducting work site inspections to help employers comply with health and safety regulations. ❐ Collaborating with provincial and federal agencies and ministries on matters of occupational health and safety ❐ Providing access to prevention resources for workers and employers	As required by the Workers Compensation Act (WCA Sec 68), employers must immediately report the following types of incidents to WorkSafeBC at 1-888-621-7233 (whether there is an injury or not): ❐ Any incident that kills or seriously injures a worker ❐ A major leak or release of a dangerous substance ❐ A major structural failure or collapse of a structure, equipment, construction support system, or excavation ❐ A fire or explosion that had a potential for causing serious injury to a worker ❐ Any blasting accident that results in injury, or unusual event involving explosives (required by regulation) ❐ A diving incident that causes death, injury, or decompression sickness requiring treatment (required by regulation) This requirement is in addition to the requirement of reporting workplace injuries or disease for claims purposes.	Prompt investigation of incidents must be conducted to identify causation and prevent recurrence. The WCA (sec 69) requires preliminary investigations to be conducted within 48 hours and full investigations completed within 30 days of the following types of incidents: ❐ is required to be reported under section 68 (specified above), ❐ resulted in injury to a worker requiring medical treatment, ❐ did not involve injury to a worker, or involved only minor injury not requiring medical treatment, but had a potential for causing serious injury to a worker, or ❐ was an incident required by regulation to be investigated. The investigation process must be carried out by persons knowledgeable about the type of work involved and, if they are reasonably available, with the participation of the employer or a representative of the employer and a worker representative. Full investigations must be submitted to WorkSafeBC.

Ministry of Agriculture	Emergency management support roles for all hazards (upon request of Local Authority, First Nation, EMBC, or other requesting agency):
	    ❐ Provide advice to farmers, aqua-culturalists and fishers on the protection of crops, livestock and provincially managed fish and marine plant stocks.
	    ❐ Coordinate the emergency evacuation and care of poultry and livestock.
	    ❐ Inspect and regulate food quality.
	    ❐ Identify food and potable water supplies.
	    ❐ Assist the Minster of Health in the inspection and regulation of food safety.
		The designated lead provincial ministry for planning and response before, during and after an emergency for:
		    ❐ Diseases and epidemics as specified below:
		        ❐ Animal diseases
		        ❐ Plant diseases
		        ❐ Pest infestations	

HEMBC North	Health Emergency Management BC (HEMBC) is a program under the Provincial Health Services Authority (PHSA). HEMBC provides the expertise, education, tools, and support specifically for the BC Health Sector to effectively mitigate, prepare for, respond to, and recover from the impacts of emergency events; ensuring the continuity of health services. There is a HEMBC team in each BC health authority. HEMBC-North deals specifically with Northern Health. ❐ Maintain a 24-hour emergency/on call contact number for notification and activation of the health system in Northern BC.	❐ For emergency events that require immediate connection with Northern Health, please call HEMBC on call (24/7) - **855-554-3622.** HEMBC will notify / activate the appropriate Northern Health programs (ie. Public Health, Acute Care etc.) based on the nature of the event / emergency. Please include this number in industry ERPs for the use of permit holders in contacting Northern Health on an emergency basis. ❐ Notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the incident/emergency event.	

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Federal Agency Roles

	Before the Incident	During the Incident	After the Incident

*ECCC

Before the Incident

Environment & Climate Change Canada's Environmental Emergencies Program (EEP) protects Canadians and their environment from the effects of environmental emergencies through provision of science-based expert advice and regulations.

The key Acts and Regulations that govern ECCC's role in environmental emergencies that allow it to deliver its mandate are:
- ❑ *Canadian Environmental Protection Act, 1999*
- ❑ *Fisheries Act—Pollution Prevention Provisions;*
- ❑ *Migratory Birds Convention Act, 1994;*
- ❑ *Statutory Notification Requirements—EC's Environmental Notification System.*
- ❑ *Environmental Emergencies Regulations.*

During the Incident

During an environmental emergency, *The National Environmental Emergencies Centre (NEEC)* is the focal point for ECCC.

ECCC's services during an environmental emergency:
- ❑ Collaborate with federal, provincial, territorial and international environmental protection agencies to enable rapid sharing of information.
- ❑ Convene and chair a Science Table of experts and stakeholders to develop consensus based advice to the Lead Agency.
- ❑ Identify environmentally sensitive areas and priorities (sensitivity and resource at risk mapping).
- ❑ Advise on mitigation and cleanup measures.
- ❑ Provide support and guidance in the assessment of oiled shorelines to prioritize their protection and cleanup (Shoreline Cleanup Assessment Technique (SCAT)).
- ❑ Advice on the fate and behavior of the spilled product.
- ❑ Advice on sampling and laboratory analysis.
- ❑ Provide weather forecasting and spill dispersion modelling to identify where these substances are likely to move in the environment.
- ❑ Provided expertise on the migratory bird resources and species at risk, including on-site assessment and determination of wildlife impact.
- ❑ Can conduct post-emergency assessments.

After the Incident
- ❑ ECCC can conduct post-emergency assessments.
- ❑ Provide specialized advice in shoreline clean-up assessment techniques (SCAT).
- ❑ Provide Advise on mitigation and cleanup measures..

*DFO

Before the Incident

The Canadian Coast Guard is the lead federal agency for ensuring appropriate response to all ship-source and unknown mystery spills in Canadian waters and waters under international agreements.
- ❑ Establishes appropriate and nationally consistent level of preparedness and response services in Canadian waters.
- ❑ Design and develop related regulations, policies, strategies and tools.
- ❑ Review, assess and monitor activities associated with fish habitat to ensure their compliance with the Fisheries Act and Species at Risk Act.
- ❑ Conduct environmental assessments under the Canadian Environmental Assessment Act.
- ❑ Design, develop and implement communication and education strategies.

During the Incident
- ❑ Any amount of hydrocarbons entering a waterway frequented by fish or occupied by waterfowl is deemed to be in contravention of the Federal Fisheries Act and must be reported to the Department of Fisheries and Oceans.
- ❑ Work together with provincial environment protection agencies and may be initially notified by ECCC.
- ❑ May send personnel to the site if there has been or could potentially be an impact to fish or fish habitat.
- ❑ Monitors and investigates all reports of marine pollution in Canada in conjunction with other federal departments.
- ❑ Maintains communications with the program's partners, including Transport Canada and ECCC, to ensure a consistent coordinated approach to marine pollution incident response.
- ❑ Aids in search and rescue operations.

After the Incident
- ❑ Work closely with ECCC, The Canadian Coast Guard and other provincial environmental agencies.

NAV Canada

Before the Incident

NAV Canada is a private company who coordinates the safe and efficient movement of aircraft in Canadian domestic airspace and international airspace assigned to Canadian control.

Flight Information Centre (FIC) – FIC Services

Each Flight Information Centre is responsible for providing its particular service area with the following services, which pilots rely upon for safe flight planning and operations:
- ❑ Emergency
- ❑ Aviation Weather Briefing
- ❑ Flight Planning
- ❑ En-route Flight Information Services
- ❑ Remote Aerodrome Advisory Services (RAAS)

During the Incident
- ❑ As requested by the oil and gas company, the Flight Information Centre will issue a NOTAM (Notice to Airmen).
- ❑ To close air space beyond an airport (e.g. above a sour gas release), Refer to Transport Canada on back side of this page.

After the Incident
- ❑ Rescind the NOTAM.

Health Canada

Before the Incident
- ❑ Sets national standards to keep the environment healthy, keep water and air pollution low and Canadians safe.
- ❑ Maintains a nationwide network of radiation monitoring stations and can act if levels spike.
- ❑ Under Chemicals Management Plan, assess health risks from chemicals used in manufacturing and agriculture and require users to prove they actually need the chemicals to make their products
- ❑ Sets strict rules on how chemicals are used in order to limit human exposure.
- ❑ Preparedness exercises are designed to test how well the plans and procedures work during simulated emergency situations. Such exercises help the government identify strengths as well as any problems or inadequacies in preparedness plans and procedures so that these can be addressed before, not after, an actual emergency.

During the Incident
- ❑ During a health emergency or disaster, Health Canada and the Public Health Agency of Canada are responsible for supporting emergency health and social services in the provinces and territories.

After the Incident
- ❑ Work collaboratively with the provinces and territories to test ways in which the Canadian health care system can be improved and ensure its sustainability for the future.

Public Health Agency of Canada

Before the Incident

The Centre for Emergency Preparedness and Response (CEPR) is responsible for:
- ❑ Developing and maintaining national emergency response plans for the Public Health Agency of Canada and Health Canada.
- ❑ Assessing public health risks during emergencies.
- ❑ Contribution to keeping Canada's health and emergency policies in line by collaborating with other federal and international health and security agencies.
- ❑ The health authority in the Government of Canada on bioterrorism, emergency health services and emergency response.
- ❑ Strengthen intergovernmental collaboration on public health and facilitate national approaches to public health policy and planning.
- ❑ Manages emergency preparedness and emergency response plans and keeps them up to date.
- ❑ Develops and runs exercises to train emergency workers.
- ❑ Develops and delivers training courses that teach health workers how to respond to emergencies.

During the Incident
- ❑ In an emergency situation, the Office of Emergency Response Services (OERS) is responsible for supporting emergency health and social services in the provinces, territories or abroad. It manages the National Emergency Stockpile System (NESS), which includes medical, pharmaceutical and related emergency supplies. The Office is responsible for the federal response to emergencies that have health repercussions; this includes the deployment of health emergency response teams (HERT).
- ❑ If a public health emergency grows beyond one province and/or territory, the Public Health Agency of Canada usually gets involved.

After the Incident
- ❑ Work with Health Canada to test ways in which the Canadian health care system can be improved and ensure its sustainability for the future.

*Indigenous Services Canada, Regional Operations and First Nations and Inuit Health Branch

Since the Government of Canada's renewed relationship with Indigenous peoples in Canada, measures were initiated to effect a shift in the way the Government delivers services to Indigenous peoples. This included the creation of two new departments, which was announced on December 4, 2017. The two newly created departments, Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and Indigenous Services Canada (ISC), are intended to improve the delivery of services while accelerating movement towards self-government and self-determination of Indigenous peoples.

As part of the departmental transition, both the former Regional Operations (RO) part of Indigenous and Northern Affairs Canada (INAC) and all of First Nations and Inuit Health Branch (FNIHB) of Health Canada have been absorbed into the newly created Indigenous Services Canada (ISC). RO and FNIHB work closely and collaborate towards the provision of emergency preparedness and response activities to First Nations communities in Canada.

In regards to First Nations emergency management, the role of RO is to liaise, communicate, cooperate, coordinate and collaborate with First Nations and public, private, and non-government sector partners in support of on reserve emergency management service delivery. ISC-RO supports First Nations in the four pillars of emergency management through service agreements with partners such as provincial emergency management agencies and the Red Cross.

FNIHB carries out the public health preparedness and response activities related to natural and man-made disasters. This includes Communicable Disease Control and Environmental Public Health Services. In addition, FNIHB administers Non-Insured Health Benefits to First Nations clients, which includes extended coverage for medical transportation, pharma-care, medical devices and mental health supports. During an emergency, FNIHB works with First Nations leadership and health service providers to ensure health needs of First Nations communities are met.

Provincial specific FNIHB roles & responsibilities will be found in this section of the ERP, if applicable or as appropriate.

*Indian Oil & Gas Canada

IOGC is an organization committed to managing and regulating oil and gas resources on First Nation reserve lands. It is a special operating agency within Indigenous Services Canada.

IOGC is responsible for oil and gas on First Nation reserve lands across Canada, but only a handful of reserves exist north of the 60th parallel. Therefore, practically all of IOGCs work is south of the 60th parallel, with most of that in the Western Canada Sedimentary Basin.

IOGC's general responsibilities are to:
- ❑ identify and evaluate oil and gas resource potential on Indian reserve lands;
- ❑ encourage companies to explore for, drill and produce these resources through leasing activity;
- ❑ ensure equitable production, fair prices and proper collection of royalties on behalf of First Nations; and
- ❑ secure compliance with and administer the regulatory framework in a fair manner.

IOGC operates pursuant to the *Indian Oil and Gas Act, 2009*, and its associated *Indian Oil and Gas Regulations, 2019*, as well as other relevant legislation and guidelines (see Acts and Regulations) which came into force and became law on August 1, 2019. Oil and gas activity on First Nation reserve lands depends on agreements involving First Nation band councils, oil and gas companies, and Indian Oil and Gas Canada.

Additional information is available at: http://www.pgic-iogc.gc.ca/eng/1100110010458/1100110010464
Acts and Regulations: https://www.pgic-iogc.gc.ca/eng/1100110010437/1100110010438

Federal Agency Roles

	Before the Incident	During the Incident	After the Incident

Transport Canada	❑ Maintain a 24 hour emergency telephone service.
	
	*CANUTEC
	❑ Regulate the handling, offering for transport and the transport of dangerous goods by all modes in order to ensure public safety.
	❑ Federal regulations require that CANUTEC be contacted in the event of an incident or accident involving dangerous goods and infections substances.
	❑ Maintains records of over 3 million Safety Data Sheets (SDS).
	
	Aviation Operations Centre (AVOPS)
	❑ Federal regulations require that AVOPS be contacted if there is imminent and immediate threat to aviation and public safety.
		*CANUTEC
		❑ Assist emergency response personnel in handling dangerous good emergencies including advice on
		  ❑ Chemical, physical and toxicological properties and incompatibilities of the dangerous goods
		  ❑ Health hazards and first aid
		  ❑ Fire, explosion, spill or leak hazards
		  ❑ Remedial actions for the protection of life, property and the environment
		  ❑ Evacuation distances
		  ❑ Personal protective clothing and decontamination
		❑ CANUTEC staff does not go to the site of an incident, however, should on-site assistance be required, CANUTEC can assist in the activation or industry emergency response plans.
		❑ Provide communication links with the appropriate industry, government or medical specialists.
		
		Aviation Operations Centre (AVOPS)
		❑ To close air space beyond an airport in a defined area (e.g. above a sour gas release), AVOPS can be contacted by the oil and gas company.
			*CANUTEC
			❑ Maintain voice communication and written information records for two years for the protection of all parties.
			
			Aviation Operations Centre (AVOPS)
			❑ Rescind the NOTAM and re-open air space that was closed due to emergency.

*Emergency Response Assistance Canada	Emergency Response Assistance Canada (ERAC) is a not for profit cooperative organization built by industry for industry providing safe, timely effective, sustainable, cost effective flammable liquids and gases emergency preparedness and response assistance to all Plan Participants and Stakeholders of ERAC.
	❑ ERAC will act on behalf of the Plan Participant to develop, submit, update, and respond to the requirements of the Plan Participant ERAP submitted to and approved by Transport Canada.
	❑ ERAC provides a network of experienced, trained Technical Advisors (TAs), Remedial Measures Advisors (RMAs) and Response Teams who respond to rail, road and stationary tank incidents involving flammable gases, Class 2.1 Liquefied Petroleum Gas (LPG) emergencies and Flammable Liquids Class 3 rail transport and road cargo tank transport emergencies. The emergency responders are constantly available through a 24 hour activation telephone number.
	❑ Once a year, there is Regional Training that is held in each region for the Remedial Measures Advisors, Technical Advisors, Response Team Leaders, Alternate Team Leaders as well as all Response Team Members to test their skills and update them on any new developments. Also, once every two years, National Training Session is held for all the Remedial Measures Advisors, Technical Advisors, Response Team Leaders and Alternate Team leaders across Canada.
		Provides emergency response to plan participants who transport the following products by road or rail, or those who store these products in tanks with capacities of 450 litres or greater. These products are gases at standard temperatures and pressure, and include: Propane (UN1978), Butane (UN1011), Propylene (UN1077), Butylene (UN1012), Isobutene (UN1969), Isobutylene (UN1055), and NGL (UN1075). It is recognized that these products may contain a concentration of condensate and/or quantities of other elements including hydrogen sulphide.
		❑ Response is also provided to emergencies involving Butadiene – 1,3 (stabilized) (UN1010).
		
		In addition we respond to the following Flammable Liquids transported by rail only:
		  UN1170 Ethanol UN1987 Alcohols, N.O.S.
		  UN1202 Diesel Fuel UN1993 Flammable Liquid, N.O.S.
		  UN1203 Gasoline UN3295 Hydrocarbons, Liquid, N.O.S.
		  UN1267 Petroleum Crude Oil UN3475 Ethanol and Gasoline Mixture
		  UN1268 Petroleum Distillates N.O.S. UN3494 Petroleum Sour Crude Oil, Flammable, Toxic
		  UN1863 Fuel Aviation, Turbine Engine
		❑ If LPG/Flammable Liquid Incident, Emergency Call Centre Operator receives an activation (notification) phone call.
		❑ Emergency Call Centre Operator sends group email to Home Based Coordinator.
		❑ Home Based Coordinator / Technical Advisor conferenced into call to assist with information gathering.
		❑ Caller requires technical advice.
		❑ Home Based Coordinator / Technical Advisor provides technical advice.
		❑ Caller requests response team.
		❑ Confirm plan participant involvement.
		❑ Plan participant notified of activation.
		❑ Home Based Coordinator / Technical Advisor activate plan.
		❑ Mobilization phase ERAC-002.
		❑ Initial incident size-up.
		❑ Damage and spill assessment.
		❑ Develop Incident Action Plan.
		❑ Execute IAP & initiate planning for next operational period.
		❑ Update Emergency Call Centre Operator and Home Based Coordinator.
			❑ Terminate and de-mobilize.
			❑ Post-incident assessment and communication program.

*PSC	❑ Public Safety Canada works with provincial and territorial officials to ensure first responders and emergency management personnel are well-prepared through education, support and exercises. ❑ Responsible for promoting and coordinating the preparation of departmental emergency management plans as well as coordinating the government's response to an emergency through the Government Operations Centre (GOC).	❑ Public Safety Canada houses the Government Operations Centre at the hub of the national emergency management system. It's an advanced centre for monitoring and coordinating the federal response to an emergency.	❑ In the event of a large-scale natural disaster where response and recovery costs exceed what individual provinces and territories could reasonably be expected to bear on their own, PS provides financial assistance to the provincial and territorial governments through the Disaster Financial Assistance Arrangements (DFAA). Assistance is paid to the province or territory – not directly to individuals or communities. The provincial or territorial governments design, develop and deliver disaster financial assistance, determining the amounts and types of assistance that will be provided to those who have experienced losses.

*Canada Energy Regulator Roles & Responsibilities

The CER's top priority in any emergency is to make sure that people are safe and secure, and that property and the environment are protected. Any time there is a serious incident, CER inspectors may attend the site to oversee a company's immediate response. The CER will require that all reasonable actions are taken to protect employees, the public and the environment. Further, the CER will verify that the regulated company conducts adequate and appropriate clean-up and remediation of any environmental effects caused by the incident.

As lead regulatory agency, the CER:
❑ Monitors, observes and assesses the overall effectiveness of the company's emergency response in terms of:
- Emergency Management
- Safety
- Security
- Environment
- Integrity of operations and facilities; and
- Energy Supply.

❑ Investigates the event, either in cooperation with the Transportation Safety Board of Canada, under the Canada Labour Code, or as per the *Canada Energy Regulator Act or Canada Oil & Gas Operations Act* (whichever is applicable)
❑ Inspects the pipeline or facility
❑ Examines the integrity of the pipeline or facility
❑ Requires appropriate repair methods are being used
❑ Appropriate environmental remediation of contaminated areas is conducted
❑ Coordinate stakeholder and Aboriginal community feedback regarding environmental clean-up and remediation
❑ Confirms that a company is following its Emergency Procedures Manual (s), commitments, plans, procedures, and CER regulations and identifies non-compliances
❑ Initiates enforcement actions as required
❑ Approves the restart of the pipeline.

If applicable; refer to the CER site section behind the blue Area Specific Information tab for further regulations, definitions and, reporting guidelines for CER related incidents specific to this ERP.

*Transportation Safety Board Mandate

The Canadian Transportation Accident Investigation and Safety Board Act provides the legal framework that governs TSB activities. Our mandate is to advance transportation safety in the marine, pipeline, rail and air modes of transportation by:
❑ conducting independent investigations, including public inquiries when necessary, into selected transportation occurrences in order to make findings as to their causes and contributing factors;
❑ identifying safety deficiencies, as evidenced by transportation occurrences;
❑ making recommendations designed to eliminate or reduce any such safety deficiencies; and
❑ reporting publicly on our investigations and on the findings in relation thereto.

As part of its ongoing investigations, the TSB also reviews developments in transportation safety, and identifies safety risks that they believe the government and the transportation industry should address to reduce injury and loss.

To instill confidence in the public regarding the transportation accident investigation process, it is essential that an investigating agency be independent and free from any conflicts of interest when investigating accidents, identifying safety deficiencies, and making safety recommendations. As such, the TSB is an independent agency, separate from other government agencies and departments, that reports to Parliament through the President of the Queen's Privy Council for Canada. Our independence enables us to be fully objective in making findings as to causes and contributing factors, and in making transportation safety recommendations.

In identifying the causes and contributing factors of a transportation incident, it is not the function of the Board to assign fault or determine civil or criminal liability. However, the Board does not refrain from fully reporting on the causes and contributing factors merely because fault or liability might be inferred from the Board's findings. No finding of the Board should be construed as assigning fault or determining civil or criminal liability. Findings of the Board are not binding on the parties to any legal, disciplinary, or other proceedings.

http://tsb-bst.gc.ca/eng/gui-about/index.html

Section 6: Forms

Documentation During and After an Incident

Form Descriptions

Incident Command System (ICS) Forms

ICS 201 Incident Briefing
ICS 202 Incident Objectives
ICS 203 Organization Assignment List
ICS 204 Assignment List
ICS 207 Incident Organization Chart
ICS 208 Safety Message / Plan
ICS 209 Incident Status Summary
ICS 211 Check-In / Out List
ICS 214 Activity Log
ICS 215 Operational Planning Worksheet
ICS 215A IAP Safety Analysis
ICS 221 Demobilization Checkout
ICS 230 Meeting Schedule
ICS 231 Meeting Summary
ICS 233 Incident Open Action Tracker

Emergency Forms

A1 Initial Emergency Report Form
A2 Odour Complaint Script
A3 Regulatory First Call Communication
A4 Incident Action Plan Checklist
A5 Air Monitoring Log
A6 Threatening Call / Bomb Threat
A7 STARS Landing Zone Card

Resident Forms

B1 Reception Centre Registration Log
B2 Resident Compensation Log
B3 Resident Contact Log
B4 Roadblock Log
B5 Evacuation Notice
B6 Early Notification / Voluntary Evacuation Phone Message
B7 Shelter-In-Place Phone Message
B8 Evacuation Phone Message

Media Forms

C1 Preliminary Media Statement
C2 Media Contact Log
C3 Government Agency Contact Log
C4 Media Centre Site

PPOST Form

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Documentation During and After an Incident

All personnel are required to document their actions on the ICS 214 – Activity Log throughout the duration of the incident. Additionally, note takers should be assigned to take notes at meetings and to document the discussions, decisions, overall activities, etc. at the Incident Command Post (ICP) and Emergency Operations Centre (EOC). The status of any changing documents such as status boards, wall charts, laminated maps with mark-ups, etc. should be captured prior to each set of new changes. It is essential that all documentation is correctly dated, and time stamped to provide the correct order and time of events.

It is imperative that accurate documentation is kept throughout the duration of an incident for record keeping purposes. Records kept may be used for legal, investigation, audits, historical and/or analytical purposes. All documentation must be held for a minimum of 5 years as it may be requested by the regulatory agency at any point during that time.

It is the Documentation Units responsibility to collect documentation (forms, checklists, event logs, etc.) from response team members and maintain a consistent system for organizing the data.

Form Descriptions

The Incident Command System uses a series of standard forms and supporting documents that convey directions for the accomplishment of the objectives and distributing information. Listed below are the standard ICS form titles and descriptions of each form utilized.

Further ICS forms can be found through the ICS Canada website: http://www.icscanada.ca/en/forms.html.

Standard ICS Form Title	ICS Form Description
ICS 201 Incident Briefing	Provides the Incident Command and General Staffs with basic information regarding the incident situation and the resources allocated to the incident. This form also serves as a permanent record of the initial response to the incident.
ICS 202 Incident Objectives	Describes the basic strategy and objectives for use during each operational period.
ICS 203 Organization Assignment List	Provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position.
ICS 204 Assignment List	Informs Division and Group supervisors of incident assignments.
ICS 207 Incident Organization Chart	A complete picture of the organizational structure for the incident.
ICS 208 Safety Message / Plan	Expands on the Safety Message and Site Safety Plan.
ICS 209 Incident Status Summary	Summarizes incident information for staff members and external parties, and provides information to the Public Information Officer for preparation of media releases.
ICS 211 Check-In/Out List	Used to check in personnel and equipment arriving at or departing from the incident. Check-in / out consists of reporting specific information that is recorded on the form.
ICS 214 Activity Log	Provides a record of unit activities. Unit Logs can provide a basic reference from which to extract information for inclusion in any after-action report.

Form Descriptions, continued

Standard ICS Form Title	ICS Form Description
ICS 215 Operational Planning Worksheet	Documents decisions made concerning resource needs for the next operational period. The Planning Section uses this Worksheet to complete Assignment Lists, and the Logistics Section uses it for ordering resources for the incident. This form may be used as a source document for updating resource confirmation on other ICS forms such as the 209 Incident Status Summary.
ICS 215A Incident Action Plan Safety Analysis	Used to communicates to the Operations and Planning Section Chiefs the potential hazards identified by the Safety Officer. It identifies mitigation measures to address the identified hazards.
ICS 221 Demobilization Checkout	Ensures that resources checking out of the incident have completed all appropriate incident business, and provides the Planning Section information on resources released from the incident.
ICS 230 Meeting Schedule	To record information about the daily scheduled meeting activities.
ICS 231 Meeting Summary	Provides more detailed information concerning the attendees and notes from a particular meeting.
ICS 233 Incident Open Action Tracker	Used by Command Staff to track time sensitive tasks / actions assigned to incident personnel.

Emergency Form Title	Emergency Form Description
A1 Initial Emergency Report Form	Used by recipient of a phone call from either a member of the public or other company personnel to record detailed information about incident.
A2 Odour Complaint Script	Used to record odour information from a member of the public as well as scripts to follow.
A3 Regulatory First Call Communication	A regulatory required form used to send detailed information to the regulator about an emergency used for assessment, historical, and analytical purposes following an incident.
A4 Incident Action Plan Checklist	A checklist of other forms and information required to accurately create an incident action plan.
A5 Air Monitoring Log	A form used by designated Air Monitor personnel to log information about air quality readings.
A6 Threatening Call / Bomb Threat	Detailed point driven form used to document incoming phone calls pertaining to personnel threats and bomb threats.
A7 Stars Landing Zone Card	An information card utilized if medical evacuation is required via STARS Air Ambulance.

Resident Form Title	Resident Form Description
B1 Reception Centre Registration Log	Log used by Reception Centre Rep to record information from evacuees being received at the reception centre. Can also be faxed to reception centre in case a representative has not been identified or cannot make it before evacuees start arriving.
B2 Resident Compensation Log	Detailed spreadsheet for expenses incurred by evacuees so that compensation may be properly dealt with.

Form Descriptions, continued

Resident Form Title	Resident Form Description
B3 Resident Contact Log	A log used by various company personnel to record contact made with residents, whether they're sheltered / evacuated and if assistance is required.
B4 Roadblock Log	A log used by designated Roadblock personnel to identify details about vehicles and persons entering or exiting a hazard area.
B5 Evacuation Notice	A document to be left in doors / windows of surface developments that are unable to be contacted as a way to issue evacuation instructions
B6 Early Notification/Voluntary Evacuation Message	A script and document filled out by Telephoner personnel issuing calls to residents for early notification and voluntary evacuation purposes.
B7 Shelter-In-Place Message	A script and document filled out by Telephoner personnel issuing calls to residents with shelter-in-place instructions.
B8 Evacuation Phone Message	A script and document filled out by Telephoner personnel issuing calls to residents with evacuation instructions.

Media Form Title	Media Form Description
C1 Preliminary Media Statement	A generic script used by the Media Spokesperson to issue media statements until which time more detailed information is known and can be issued.
C2 Media Contact Log	A log used to identify what media outlets/persons have contacted the company and their contact information.
C3 Government Agency Contact Log	A log used to identify what government agencies have been notified about the incident.
C4 Media Centre Site	A document to distribute to media outlets/persons about the location for further media enquiries and press releases as well as details to get there.

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ICS 201 Incident Briefing Form

H2Safety

Incident Name:	
Date/Time Initiated:	
Prepared By:	ICS Position:

| Level of Emergency | Alert / Minor | Level 1 | Level 2 | Level 3 |

Map Sketch:

Note: Maps can be drawn or attached here.

Situation Summary: (Write description or attach A1)

Safety Briefing:

ICS 201 Incident Briefing Form

H2Safety

Current and Planned Objectives:	
Priorities: (1) Life Safety (2) Incident Stabilization (3) Environment & Property	

1. Ensure Safety of Citizens and Response Personnel:	**4. Minimize Economic Impacts:**
☐ 1a. Identify hazard(s) of released product.	☐ 4a. Consider tourism and local economic impacts.
☐ 1b. Establish site control (hot zone, warm zone, cold zone, & security).	☐ 4b. Protect public and private assets, as resources permit.
☐ 1c. Establish an Emergency Response Zone and Initiate Public Safety Actions.	☐ 4c. Establish damage claims process.
☐ 1d. Consider evacuations if needed.	**5. Keep Stakeholders and Public Informed of Response Activities:**
☐ 1e. Establish aircraft restrictions.	☐ 5a. Provide forum to obtain stakeholder input and concerns.
☐ 1f. Monitor air in impacted areas	☐ 5b. Provide stakeholders with details of response actions.
☐ 1g. Develop site safety plan for personnel and ensure safety briefings are conducted.	☐ 5c. Identify stakeholder concerns and issues, and address as practical.
2. Control the Source of the Release:	☐ 5d. Provide timely safety announcements.
☐ 2a. Complete emergency shutdown.	☐ 5e. Conduct regular news briefings.
☐ 2b. Conduct firefighting.	☐ 5f. Conduct public meetings, as appropriate.
☐ 2c. Initiate temporary repairs.	
3. Manage a Coordinated Response Effort:	
☐ 3a. Complete or confirm notifications.	
☐ 3b. Establish a unified command organization and facilities (command post, etc.).	
☐ 3c. Ensure mobilization and tracking of resources and account for personnel and equipment.	
☐ 3d. Complete documentation.	

Current and Planned Actions, Strategies and Tactics:	
Time:	**Actions:**
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	

Current Organizational Structure: (draw in current response structure)*

*** This is a condensed Organizational Chart to account for all currently responding personnel during the Initial Response.**

Incident Commander
Name
Number

Information Officer
Name
Number

Liaison Officer
Name
Number

Safety Officer
Name
Number

On-Site Group Supervisor
Name
Number

Public Safety Group Supervisor
Name
Number

Documentation
Name
Number

SITE SAFETY
Name
Number

Air Monitors
Name
Number

Control
Name
Number

Roadblocks
Name
Number

Containment
Name
Number

Rovers
Name
Number

Other
Name
Number

Telephoners
Name
Number

Other
Name
Number

Reception Centre Representative
Name
Number

Other
Name
Number

Other
Name
Number

Note: Refer to ICS 207 Incident Organization Chart in Section 6: Forms (Blue Tab) for full command structure.

Resources Summary:

Resource(s)	Time Called	ETA	On-Site	Notes (Location/Assignment/Status)
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	
			☐	

External Notifications: (Government)

Agency	Time Called	Notes

ICS 201 Incident Briefing Form

Site Safety and Hazard Control Analysis

Site Control

1. Is Site Control set-up? ☐ Yes ☐ No	2. Is there an On-Scene Command Post? ☐ Yes ☐ No If so, where?
3. Have all personnel been accounted for? ☐ Yes ☐ No ☐ Don't Know	Injuries: Fatalities: Unaccounted: Trapped:
4. Are observers involved or rescue attempts planned? Observers: ☐ Yes ☐ No Rescuers: ☐ Yes ☐ No	5. Are decontamination areas setup? ☐ Yes ☐ No If so, where?

Hazard Identification, immediate signs of: (if yes, explain in remarks)

1. Electrical line(s) down or overhead? ☐ Yes ☐ No	2. Unidentified liquid or solid products visible? ☐ Yes ☐ No
3. Wind direction across incident: ☐ Towards your position Wind Speed: ☐ Away from your position	4. Is a safe approach possible? ☐ Yes ☐ No
5. Odours or smells? ☐ Yes ☐ No	6. Vapours visible? ☐ Yes ☐ No
7. Holes, ditches, fast water, cliffs, etc. nearby? ☐ Yes ☐ No	8. Fire, sparks, sources of ignition nearby? ☐ Yes ☐ No
9. Is local traffic a potential problem? ☐ Yes ☐ No	10. Product placards, colour codes visible? ☐ Yes ☐ No
11. Other Hazards? ☐ Yes ☐ No	12. As you approach the scene from the upwind side, do you note a change in the status of any of the above? ☐ Yes ☐ No

13. Remarks:

Hazard Mitigation: have you determined the necessity for any of the following?

1. Entry Objectives:

2. Warning sign(s), barriers, colour codes in place? ☐ Yes ☐ No

3. Hazardous material being monitored? ☐ Yes ☐ No
   3a. Sampling equipment:
   3b. Sampling location(s):
   3c. Sampling frequency:
   3d. Peak reading:
   3e. Personal exposure monitoring:

4. Protective gear / level:	4a. Gloves:
4b. Respirators	4c. Clothing:
4d. Boots:	4e. Chemical cartridge change frequency:

5. Decontamination
   5a. Instructions:
   5b. Decontamination equipment and materials:

6. Emergency escape route established? ☐ Yes ☐ No
   Route?

7. Field responders briefed on hazards? ☐ Yes ☐ No

8. Remarks:

Protective Zones: record initial control perimeters (see Figure 1)

ICS 201 Incident Briefing Form

H₂Safety

Evacuation Route
Decontamination Station
Staging Area
Command Post

HAZARD

HOT ZONE

WARM ZONE

COLD ZONE

WIND DIRECTION

**Figure 1
Protective Zones**

1. Is there a Hot Zone established?
    ☐   Yes
    ☐   No
    If so, Where?

2. Is there a Warm Zone established?
    ☐   Yes
    ☐   No
    If so, Where?

3. Is there a Cold Zone established?
    ☐   Yes
    ☐   No
    If so, Where?

4. Remarks: (Include any information on evacuation route, etc.)

5. Include any site sketches or photos of the protective zones (if available):

ICS 202 Incident Objectives

H2Safety

Incident Name:	
Date / Time Initiated:	
Prepared by:	ICS Position:

General Control Objectives for the Incident:

1	
2	
3	
4	
5	

Weather Forecast:

General Safety Message:

Note: Create and prioritize SMART (Specific, Measureable, Attainable, Realistic, & Time-Sensitive) objectives that address the incident issues and utilize the solutions identified on the Operations Briefing page.

ICS 203 Organization Assignment List

H2Safety
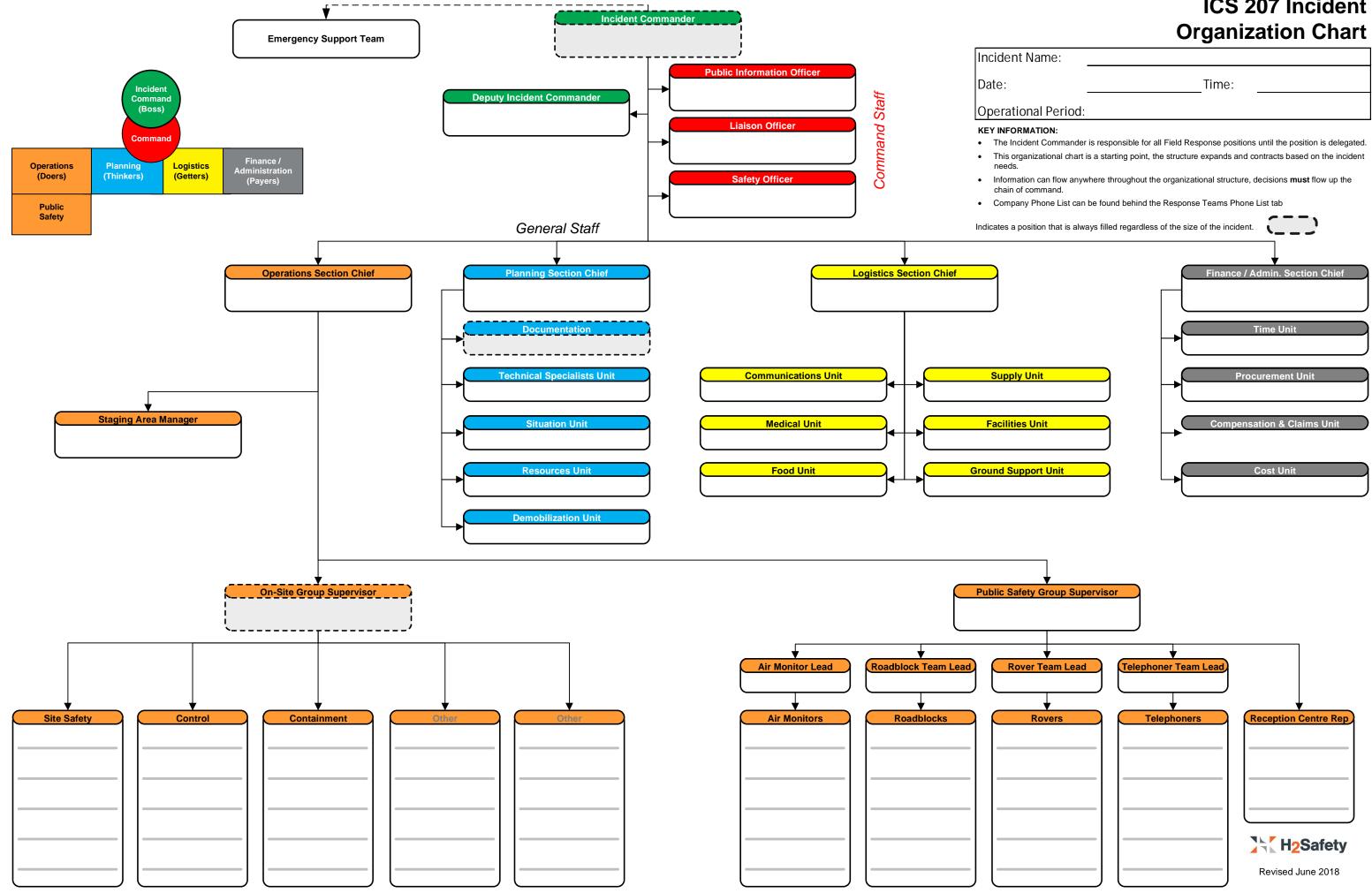
Incident Name			Operational Period (Date/Time)		
			From:	To:	

Incident Commander(s)			Operations Section		
Agency	IC	Deputy		Chief	
				Deputy	
				Staging Area Manager	
			On-Site Group		
				Supervisor	
Safety Officer				Lead	
Assistant				Lead	
Information Officer				Lead	
Assistant				Lead	
Liaison Officer				Lead	
Assistant					
			Public Safety Group		
				Supervisor	
Agency Representatives				Lead	
Agency	Name			Lead	
				Lead	
				Lead	
				Lead	
			Branch – Division / Group		
			Branch Director		
			Deputy		
Planning Section			Division/Group	Lead	
Chief			Division/Group	Lead	
Deputy			Division/Group	Lead	
Resources Unit			Division/Group	Lead	
Situation Unit			Division/Group	Lead	
Environmental Unit					
Documentation Unit			**Branch – Division / Group**		
Demobilization Unit			**Branch Director**		
Technical Specialists			**Deputy**		
			Division/Group	Lead	
			Division/Group	Lead	
Logistics Section			Division/Group	Lead	
Chief			Division/Group	Lead	
Deputy			Division/Group	Lead	
Supply Unit					
Facilities Unit			**Finance / Admin Section**		
Ground Support Unit				Chief	
Communications Unit				Deputy	
Medical Unit				Time Unit	
Food Unit				Procurement Unit	
				Compensation / Claims Unit	
				Cost Unit	

Prepared By: (Resources Unit)	Date/Time

Section 6: Forms

ICS 204 Assignment List

H2Safety

Branch:	Division / Group / Staging:

Incident Name:	Operational Period: From: Date_____ Time_____ To: Date_____ Time_____

Division / Group / Staging Operations Chief_____ Branch Director_____	Division/Group Supervisor_____ Staging Area Manager_____

Resources Assigned to This Period

Resource Identifier	Leader	No. of Persons	Contact Cell #, radio freq. Etc.	Reporting Location, Special Equipment and Supplies, Remarks

Work Assignments:

Special Instructions:

Division / Group Communications Summary

Function		Frequencies	System	Chan.	Function		Frequencies	System	Chan.
Command	Local Repeat				Logistics	Local Repeat			
Div. / Group Tactical					Ground to Air				

Prepared By: (Resource Unit Leader)		Date:	Time:
Signature:			

Section 6: Forms

ICS 207 Incident Organization Chart

Emergency Support Team

Incident Commander

Deputy Incident Commander

Command Staff

Public Information Officer

Liaison Officer

Safety Officer

Incident Command (Boss)

Command

Operations (Doers)

Planning (Thinkers)

Logistics (Getters)

Finance / Administration (Payers)

Public Safety

Incident Name: _____

Date: _____ Time: _____

Operational Period: _____

KEY INFORMATION:
- The Incident Commander is responsible for all Field Response positions until the position is delegated.
- This organizational chart is a starting point, the structure expands and contracts based on the incident needs.
- Information can flow anywhere throughout the organizational structure, decisions **must** flow up the chain of command.
- Company Phone List can be found behind the Response Teams Phone List tab

Indicates a position that is always filled regardless of the size of the incident.

General Staff

Operations Section Chief

Planning Section Chief

Logistics Section Chief

Finance / Admin. Section Chief

Documentation

Time Unit

Technical Specialists Unit

Communications Unit

Supply Unit

Procurement Unit

Staging Area Manager

Situation Unit

Medical Unit

Facilities Unit

Compensation & Claims Unit

Resources Unit

Food Unit

Ground Support Unit

Cost Unit

Demobilization Unit

On-Site Group Supervisor

Public Safety Group Supervisor

Site Safety

Control

Containment

Other

Other

Air Monitor Lead

Roadblock Team Lead

Rover Team Lead

Telephoner Team Lead

Air Monitors

Roadblocks

Rovers

Telephoners

Reception Centre Rep

H2Safety

Revised June 2018

ICS 208 Safety Message / Plan

H2Safety

Incident Name:	Operational Period:
	From: Date_____ Time_____
	To: Date_____ Time_____

Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan:

Site Safety Plan Required? ☐ Yes ☐ No

Approved Site Safety Plan(s) Located At:

Prepared By: (Name and Position)	Date Prepared:
Signature:	Time Prepared:

ICS 209 Incident Status Summary

H2Safety

Incident Name:	Location of Incident:
Date / Time Initiated:	(LSD / NTS)
Prepared by:	ICS Position

Incident Details:

Gas readings:	H2S	SO₂	LEL

Level of Emergency:

Incident Severity:	☐ Alert / Minor	☐ Level 1	☐ Level 2	☐ Level 3

Affect Medium: (Check all that apply)

☐ Air	☐ Water	☐ Soil	☐ Other – Specify:

Site Type: (Select only 1)

☐ Well (Active)	☐ Well (Abandoned/Suspended)	☐ Remote Sump
☐ Well (Drilling & Completions): Rig Name:		
☐ Battery/Plant/Facility	☐ Tank Farm/Storage	☐ Pipeline
☐ Riser (Pipeline)		
☐ Road or Road Structure	Name:	Location on Road:
☐ Other – Specify:		

Incident Type: (Check all that apply)

☐ Sour Gas Release	☐ Sweet Gas Release	☐ Liquid Spills
☐ Natural Disaster/Weather	☐ Fire/Explosion	☐ Drilling Kick
☐ Worker Injury/Fatality	☐ Security (theft, threat, terrorism)	☐ Induced Seismicity
☐ Well Bore Communication	☐ Pipeline Boring	☐ Vehicle/Transportation
☐ Equipment/Structural Damage	☐ Pipeline Break	☐ Well Control
☐ Other – Specify:		

Activity: (Check all that apply)

☐ Construction (Road, Lease, Pipe)	☐ Drilling/Exploration	☐ Waste Management
☐ Processing	☐ Well Fracturing	☐ Servicing
☐ Repair	☐ Flaring (Emergency)	☐ Well Testing
☐ Pressure Testing	☐ Transportation	
☐ Other – Specify:		

ICS 209 Incident Status Summary

Consequence or Impacts: (Check all that apply, if none, leave blank)

☐ Worker Safety (Injuries, Fatalities) | ☐ Property

☐ Economic (Loss of and/or damage to equipment or infrastructure, loss of production, work stoppage)

☐ Other – Specify:

Material Information:

Is spill off lease?	☐ Yes - Estimated spill quantity:		☐ No

☐ Liquid Hydrogen (Crude, Oil, Diesel, Fuel) | ☐ Toxic Gas Liquid (>1% Different Toxins)

☐ Acid | ☐ Emulsion (Oil, Gas, Water) | ☐ Sweet Natural Gas | ☐ Salt Water

☐ Methanol | ☐ Non-Toxic Liquids | ☐ Fresh Water

☐ Sour Natural Gas | ☐ Sour Liquids (<1% H_2S) | ☐ Other – Specify:

☐ Non-Toxic Gases (Nitrogen, Carbon Dioxide, Inert Gases)

Area Information:

Land Type:	☐ Private Land	☐ Crown Land	Field Name:

Area Type:	☐ Forest	☐ Muskeg	☐ Farmland	☐ Residential	☐ Other

Access:	☐ Helicopter	☐ ATV	☐ 4WD	☐ 2WD	☐ Unknown

Name of road the asset is located on:

KM where the incident occurred:

Distance to nearest residence/public facility:

Nearest City/Town/Open Camp:

Weather Conditions:

Weather Conditions	☐ Clear	☐ Cloudy	☐ Other:

Wind Direction	N	NE	NW	E	SE	S	SW	W

Wind Strength	☐ Calm	☐ Moderate	☐ Strong	☐ Gusty

Temperature   °C

Public / Worker Injuries / Medical Emergencies:

☐ First Aid | ☐ Hospitalization | ☐ Fatality | ☐ Other – Specify:

Notification: (Notify all agencies as required)

☐ 911 (Police/RCMP, Fire, EMS)	☐ Energy Regulator (OGC, AER*, etc.)	☐ Local Authority (MD, County, Town, City)	☐ Health Authority
☐ Canada Energy Regulator (CER)	☐ Occupational Health & Safety (OH&S)	☐ Emergency Management Agency	☐ Ministry of Transportation
☐ Workers' Compensation Board (WCB)	☐ Emergency Response Assistance Canada (ERAC)	☐ Western Canadian Spill Services (WCSS)	☐ CANUTEC
☐ Transportation Dangerous Goods (TDG)	☐ Other	☐ Other	☐ Other
☐ Other	☐ Other	☐ Other	☐ Other

*Request that the AER notify Alberta Environment & Parks (Forestry/Fish/Wildlife/Lands), Environment & Climate Change Canada (ECCC) and the Department of Fisheries and Oceans as required.

Refer to the Government Notification Matrix and External Agencies Contact List or Area Specific Information for complete list of agencies requiring contact.

H2Safety

Agency Notification

Agency Name	Contact Name	Contact Number	Notified (Y/N)

Collect all completed C3 Government Agency Contact Logs from responders for full documentation.

Notes:

Roadblock Locations:

Roadblock Number	Name	Location/LSD

Collect all completed B4 Roadblock Logs from responders for full documentation.

Notes:

Air Monitor Locations:

Air Monitor Number	Name	Location/LSD

Collect all completed A5 Air Monitoring Logs from responders for full documentation.

Notes:

Reception Centres

Name	Location	Phone Number

Collect all completed B1 Reception Centre Registration Logs from responders for full documentation.

Notes:

ICS 211 Check-In / Out List

H2Safety

Incident Name:	
Date / Time Initiated:	
Prepared by:	ICS Position:

Check-in Location ☐ Staging Area ☐ ICS Res. Unit ☐ Other:

Name of Company	Date of Check-in	Supervisor Name	Total # of Personnel	Incident Assignment	Assigned	Available	Date of Check-out

Notes:

ICS 214 Activity Log

H2Safety

Incident Name:	
Date / Time Initiated:	
Prepared by:	Position / Title:

Personnel Assigned

Name	ICS Position	Location

Activity Log

Time	Actions

ICS 215 Operational Planning Worksheet

H2Safety

Incident Name:				Operational Period:															
				To: Date_____ Time_____ To: Date_____ Time_____															

Branch	Division, Group, or Other	Work Assignments & Special Instructions	Resources														Overhead Position(s)	Special Equipment & Supplies	Reporting Location	Requested Arrival Time
			Req.																	
			Have																	
			Need																	
			Req.																	
			Have																	
			Need																	
			Req.																	
			Have																	
			Need																	
			Req.																	
			Have																	
			Need																	
			Req.																	
			Have																	
			Need																	
			Req.																	
			Have																	
			Need																	
			Req.																	
			Have																	
			Need																	
	Total Resources Required:																Prepared by:			
	Total Resources - Have on Hand:																Name: Position/Title:			
	Total Resources Need to Order:																Date/Time: Signature:			

Section 6: Forms

ICS 215a Incident Action Plan Safety Analysis

H2Safety

Incident Name:	Date / Time Initiated:
Prepared by:	ICS Position:

Division or Group	Potential Hazards									Controls (e.g., PPE, buddy system, escape routes)
	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	

ICS 221 Demobilization Checkout

H2Safety

Incident Name / Number:		Date / Time:		Demob. Number:	
Unit/Personnel Released:					
Transportation Type / Number:					
Actual Release Date / Time:			Manifest Completed? ☐ Yes ☐ No		

Destination:	Notify:	☐ HQ	☐ Agency	☐ Region	☐ Area	☐ Dispatch
	Name:					
	Date:					

Unit Leader responsible for collecting performance rating	

Unit / Personnel

You and your resources have been released subject to Sign-Off from the following:

Demobilization Unit Leader – Check the appropriate box

Logistics Section	
☐ Supply Unit	
☐ Communications Unit	
☐ Facilities Unit	
☐ Ground Support Unit Leader	
Planning Section	
☐ Demobilization Unit	
Finance/Admin Section	
☐ Time Unit	
Other	
☐	
☐	

Remarks:

Page		of		Prepared By: (Name and Position)	Signature:

Section 6: Forms

ICS 230 Meeting Schedule

H2Safety

Incident Name:	Operational Period:
	From: Date_____ Time_____

Meeting Schedule (Commonly-held meetings are included)

Date / Time	Meeting Name	Purpose	Attendees	Location

Prepared by: (Situation Unit Leader)	Date / Time:

Section 6: Forms

ICS 231 Meeting Summary

H2Safety

Incident Name:	Meeting Date / Time:
Meeting Name:	
Meeting Location:	
Meeting Facilitator:	

Attendees:

Notes: (with summary of decisions and action items)

Prepared by:	Date / Time:

ICS 233 Incident Open Action Tracker

H2Safety

	Incident Name:						
No.	**Item**	**For**	**Status**	**Start Date**	**Briefed**	**Target Date**	**Actual Date**
1							
2							
3							
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20							

ICS 233 Incident Open Action Tracker

No.	Item	For	Status	Start Date	Briefed	Target Date	Actual Date
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

A1 Initial Emergency Report Form

H2Safety

First On-Scene Actions

Evacuate	☐ Get to a safe area immediately. ☐ Move upwind if release is downwind of you. ☐ Move crosswind if a release is upwind from you. ☐ Move to higher ground if possible.
Alarm	☐ Call for help ("Man Down"). ☐ Sound bell, horn or whistle, or call by radio. ☐ For medical emergencies, call 911.
Assess	☐ Take head count, locate any casualties. Consider all of the hazards. ☐ Fill out information below to complete assessment.
Protect	☐ Put on breathing apparatus before attempting rescue.
Rescue	☐ Remove victim to a safe area.
First Aid	☐ Follow the standard first aid protocols at worksite. (CPR, etc.)
Medical Aid	☐ Arrange transport of casualties to medical aid. ☐ Provide information to Emergency Medical Services (EMS).

Incident Details *To be completed by the person involved or notified*	
Report taken by	Date / Time
Name of person calling	Caller Telephone
Incident Location (LSD / NTS)	
Event Summary	

Agencies Notified	☐ Yes Who? ☐ No
Event Status	☐ Incident contained or controlled ☐ Intermittent control possible ☐ Imminent control possible ☐ Incident is uncontrolled
Site Type	☐ Well ☐ Pipeline ☐ Tank Farm/Storage ☐ Battery/Plant/Facility ☐ Other_____
Incident Type	☐ Sour Gas Release ☐ Sweet Gas Release ☐ Pipeline Break ☐ Security (theft, threat, terrorism) ☐ Loss of Containment ☐ Fire/Explosion ☐ Worker Injury/Fatality ☐ Vehicle/Transportation ☐ Liquid Spill ☐ Other_____

A1 Initial Emergency Report Form

H2Safety

Impacts			
Public Health and Safety	☐ Could be jeopardized		☐ Is jeopardized
Public Protection Measures Taken	☐ Notification ☐ Evacuation	☐ Shelter-in-place	☐ Roadblocks
Worker Injuries	☐ First Aid ☐ Hospitalized	☐ Fatality	☐ Other_____
Distance to nearest surface development	_____km	Distance to nearest urban centre	_____km

Details

Release Impact	☐ On-Lease ☐ Off-Lease Product_____	Amount_____
Gas Readings	H2S_____ SO2_____ LEL_____ Other_____	

Distance to nearest watercourse	_____km

Details

Weather Conditions

Media Involvement?	☐ Yes ☐ No	Regulator Involvement?	☐ Yes ☐ No	Public Affairs/Community Relations Issues?	☐ Yes ☐ No

Details

Notes / Instructions Provided:

Distribute this completed report to all Key Response Personnel
Note: Ensure the First On-Scene Actions have been completed before proceeding to the Five Step Initial Response Guide.

Investigation of Complaints

When receiving an odour complaint call, document as much applicable information as possible so the company representative investigating it can do so safely.

Complaints will be prioritized based on level of perceived hazard to the public.

Company representatives will be dispatched to investigate complaints received by outside sources (member of the public, 3rd party company, etc.). If H_2S is suspected, personnel should be dispatched in teams of two (2). Any company representative who is to investigate a complaint must be trained and prepared to assume the role of Incident Commander if any of the emergency conditions are met.

Once a complaint has been investigated, the company must report the results of the investigation to the outside source who alerted the company about the situation.

Date:		Prepared by:
Time:	☐ a.m. ☐ p.m.	Duration of call:

To help us understand your immediate needs, we need to know:

Name: _____

Contact number: _____

Description of the concern: _____

_____

_____

How many people are you with right now?

Adults _____ *Children* _____

Can you provide the location of the incident?

Location of the incident (address, legal, landmark, etc.): _____

_____

Where are you right now?

❑ *Home / Work*   ❑ *In a Vehicle*   ❑ *Outside*   ❑ *Other* _____

If the resident is at home / work / outside tell them:

The company will send someone to investigate. To be safe, you and anyone that you may be with need to go inside and stay inside. Close all doors and windows and turn off any appliances that blow out indoor air (i.e. clothes dryer) or suck in outside air (i.e. heating / air conditioning). Do not go outside or attempt to start any vehicles until you are told it is safe to do so.

If the resident is in a vehicle and cannot shelter-in-place tell them:

The company will send someone to investigate. To be safe, you and anyone that may be with you need to get inside the vehicle and stay inside. Keep all doors and windows closed and shut off the air conditioning / heat. If you see or hear anything that might indicate where the incident is occurring, travel in the opposite direction of the hazard; otherwise, continue travelling on your current course which will likely take you out of the hazard area.

Someone will call you back with further instruction so please stay off of the phone so that we can contact you. If you have any urgent questions please call the company at_____.

A3 First Call Communication

H2Safety

Contact Details

Regulatory Contact		Field Centre		
Caller			Phone	

Notification	Date	Time	Release	Start Time	End Time	☐ Ongoing

Licensee		Phone

Location	**Nearest Town**	

Nearest Resident	Distance/Direction		Phone

Media Involvement? ☐ **Local** ☐ **National** ☐ **Regional** ☐ **International** Media Contact

Operator		Phone

Public Impact

Public Health and Safety ☐ Could be jeopardized ☐ Is jeopardized

Worker Injuries ☐ First Aid ☐ Fatality ☐ Hospitalization

Emergency Assessment Matrix completed with licensee ☐ Minor ☐ Two ☐ One ☐ Three

ERP Activated? ☐ Site Specific ☐ Corporate ☐ Field/Area

EPZ Size (2 km if unknown)	Numbers and Types of Public in EPZ	EOC/ICP Location

Public Protection Measures Implemented ☐ Notification ☐ Roadblocks ☐ Shelter ☐ Evacuation Number Evacuated

Release Type

Release Impact ☐ On lease ☐ Off lease H₂S Concentration

☐ Sensitive Environment Environment Affected ☐ Air ☐ Land ☐ Standing Water ☐ Flowing Water Water Body Name

Area Affected (m³) ☐ Property Damage ☐ Equipment Loss ☐ Wildlife / Livestock Affected

Gas Release	☐ Sweet	☐ Sour	Volume/Rate
Liquid Release	☐ Oil	☐ Water ☐ Effluent	Volume/Rate

☐ Release Point Determined

Containment

Third Party / Outside Assistance Required ☐ Incident contained or controlled ☐ Imminent control probable ☐ Intermittent control possible ☐ Incident is uncontrolled

Company	WCSS Co-op

Operations Type

Well Licence No.	Type of Incident	☐ Kick	☐ Blowout	☐ Loss of Circulation

Well Status ☐ Drilling ☐ Servicing ☐ Producing ☐ Injection ☐ Suspended ☐ Standing ☐ Sweet ☐ Sour ☐ Critical

Pipeline License No.	Line No.	☐ Hit	☐ Leak	☐ Rupture

Production Facility License No.	☐ Gas	☐ Gas Plant	☐ Compressor	Environmental Approval No.
	☐ Oil	☐ Battery	☐ Other	

Air Monitoring

☐ License Air Monitoring Occurring ☐ Mobile ☐ Handheld	Estimated Time of Arrival
Initial Readings / Location ☐ PPB ☐ On Site ☐ PPM ☐ Off Site	Distance
Contractor Name	Phone	AMU Phone

	Direction	Speed	Meteorological Conditions	AMU ETA
Wind				

Communications

Communications completed by Licensee and /or Regulatory Agency

☐ RCMP/Police	☐ Energy Regulator	☐ Emergency Management Agency	☐ TDG	☐ OH&S	☐ WCB
☐ Ambulance	☐ Local Authority	☐ Ministry of Transportation	☐ CANUTEC	☐ DFO	☐ WCSS
☐ Fire	☐ Health Authority	☐ Environment & Climate Change Canada (ECCC)	☐ ERAC	☐ Other	☐ Other
☐ CER	☐ First Nations	☐ Indian Oil & Gas	☐ Other	☐ Other	☐ Other

Contact Names & Phone Numbers

Incident Cause   ☐ Natural   ☐ Human-Induced unintentional   ☐ Human-Induced Intentional

Other Information

☐ First Nations Band ☐ Metis Settlement	Band / Settlement Name / Contact	Phone
Complaints	☐ Local ☐ Large area	
Private Land Title holder		Phone
Additional Information		

A4 Incident Action Plan Checklist

IAP Checklist Items:	Comments:
☐ ICS 202 – Incident Objectives	
☐ ICS 207 – Incident Organizational Chart	
☐ ICS 209 – Incident Status Summary	
☐ ICS 215 – Operational Planning Worksheet	
☐ ICS 215A – IAP Safety Analysis	
☐ ICS 230 – Meeting Schedule	
☐ ICS 233 – Incident Open Action Tracker	
☐ Map:_____	
☐ Map:_____	
☐ Other:_____	
☐ Other:_____	
☐ Other:_____	

Notes:

A4 Incident Action Plan Checklist

A5 Air Monitoring Log

H2Safety

Date: _____   Responder Name: _____

Page _____ of _____   Responder Position: _____

Time	Location of Samples	H_2S (ppm)	LEL (%)	O_2 (%)	SO_2 (ppm)	Other	Temp (°C)	Wind Conditions *		Comments
								From	**Speed (km/hr)**	

Estimate meteorological conditions where accurate readings are not available.

A5 Air Monitoring Log

H2Safety

Time	Location of Samples	H₂S (ppm)	LEL (%)	O₂ (%)	SO₂ (ppm)	Other	Temp (°C)	Wind Conditions *		Comments
								From	Speed (km/hr)	

Estimate meteorological conditions where accurate readings are not available.
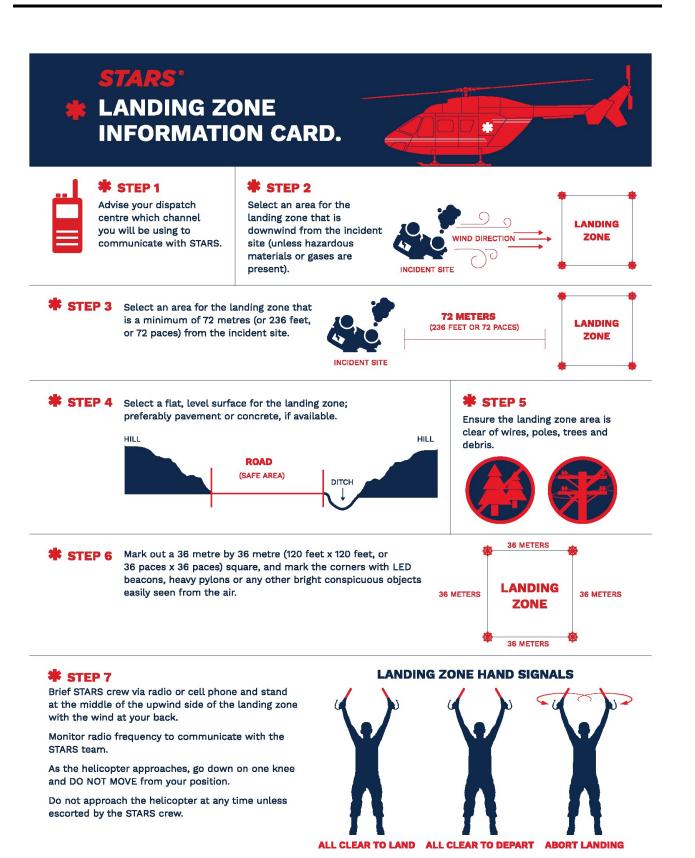
A6 Threatening Call / Bomb Threat

H2Safety

Date:	Time Call Received:	Time Call Reported:

Person Receiving Call: | What/Whom Call Directed To:

Caller's Sex: ☐ Male ☐ Female ☐ Unknown | Approximate Age:

Accent: ☐ Yes ☐ No Type: | Familiar voice: ☐ Yes ☐ No Who:

Threat (Exact Wording):

Tips:
- Listen carefully and remain calm.
- Do not interrupt caller.
- Attempt to keep caller talking.
- Attempt to ask questions below.
- Obtain as much information as you can while call is in progress.
- **Signal someone to call your supervisor; give him / her this information.**
- **Do not hang up or disconnect your phone**, even after the caller hangs up.
- For telephone tracing, call the local telephone company and local police.

If bomb threat, ask the following questions:

When will the bomb go off?
(d*ate and time*)

Where is it located?

Why did you place it?

What kind of bomb is it?

What does it look like?

What is your name?

Where are you calling from?

Was the caller familiar with company facilities, or employees? (e.g.: nicknames, familiarity with staff, etc.) ☐ Yes ☐ No

Did caller appear familiar with building / facility by the description of the bomb location? ☐ Yes ☐ No

Identifying Characteristics of Caller

Voice	Speech	Language	Manner	Background
☐ Loud	☐ Fast	☐ Excellent	☐ Calm	☐ Office Machines
☐ Soft	☐ Slow	☐ Good	☐ Angry	☐ Factory Machines
☐ High Pitched	☐ Distinct	☐ Fair	☐ Rational	☐ Street Traffic
☐ Deep	☐ Distorted	☐ Poor	☐ Irrational	☐ Airplanes
☐ Raspy	☐ Stutter	☐ Foul Language	☐ Coherent	☐ Trains
☐ Pleasant	☐ Nasal	☐ Accent	☐ Incoherent	☐ Animals
☐ Intoxicated	☐ Slurred	☐ _____	☐ Deliberate / Serious	☐ Party Atmosphere
☐ _____	☐ _____	☐ _____	☐ Emotional	☐ Music
			☐ Laughing	☐ Voices
			☐ Nervous	☐ Quiet
			☐ _____	☐ _____

> **Notify proper authorities as soon as possible. Have employees take a look around their immediate work stations for unusual packages. Evacuate building if necessary.**

Name of the supervisor first notified:

STARS®
✳ LANDING ZONE INFORMATION CARD.

✳ **STEP 1**
Advise your dispatch centre which channel you will be using to communicate with STARS.

✳ **STEP 2**
Select an area for the landing zone that is downwind from the incident site (unless hazardous materials or gases are present).

WIND DIRECTION
INCIDENT SITE
LANDING ZONE

✳ **STEP 3**
Select an area for the landing zone that is a minimum of 72 metres (or 236 feet, or 72 paces) from the incident site.

INCIDENT SITE
72 METERS
(236 FEET OR 72 PACES)
LANDING ZONE

✳ **STEP 4**
Select a flat, level surface for the landing zone; preferably pavement or concrete, if available.

HILL
HILL
ROAD
(SAFE AREA)
DITCH

✳ **STEP 5**
Ensure the landing zone area is clear of wires, poles, trees and debris.

✳ **STEP 6**
Mark out a 36 metre by 36 metre (120 feet x 120 feet, or 36 paces x 36 paces) square, and mark the corners with LED beacons, heavy pylons or any other bright conspicuous objects easily seen from the air.

36 METERS
36 METERS
LANDING ZONE
36 METERS
36 METERS

✳ **STEP 7**
Brief STARS crew via radio or cell phone and stand at the middle of the upwind side of the landing zone with the wind at your back.

Monitor radio frequency to communicate with the STARS team.

As the helicopter approaches, go down on one knee and DO NOT MOVE from your position.

Do not approach the helicopter at any time unless escorted by the STARS crew.

LANDING ZONE HAND SIGNALS

ALL CLEAR TO LAND   ALL CLEAR TO DEPART   ABORT LANDING

H2Safety

STARS®

✳ LANDING ZONE BRIEFING FOR STARS CREW.

✳ STEP 1
Identify yourself and confirm the Landing Zone Officer is present with the landing zone secure.

✳ STEP 2
Communicate the location of the landing zone using N/E/S/W to reference the accident scene or other landmarks.
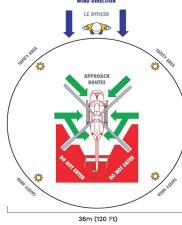
✳ STEP 3
Identify the type of surface for the landing zone (field, road, other).

✳ STEP 4
State what marking the corners of the landing zone: LED beacons, heavy pylons or any other bright conspicuous objects easily seen from the air.

✳ STEP 5
Communicate the wind direction and approximate speed.

✳ STEP 6
Identify the hazards in the area of the landing zone such as wires, poles, trees, or hazardous materials using N/E/S/W in reference to the landing zone.

WIND DIRECTION
LZ OFFICER
SAFETY AREA
SAFETY AREA
APPROACH ROUTES
DO NOT ENTER
DO NOT ENTER
SAFETY AREA
SAFETY AREA
36m (120 Ft)

STARS LANDING ZONE

SPECIAL CONSIDERATION

Remove any loose debris and indicate if there is snow or dust in the landing zone. If dusty, water down the landing zone if possible prior to the helicopter's arrival. As marshaller, maintain your position at the middle of the upwind side of the landing zone, knees and **DO NOT MOVE** from your position as the helicopter lands.

If you have any questions or comments regarding this landing zone information card or would like to watch our landing zone video, please visit **www.stars.ca**

INDUSTRY EMERGENCY LINE 1-888-888-4567
This number can also be used to provide a landing briefing to the STARS crew if radio communications are not available.

WE ARE ALL *STARS*®

Due to travel and time constraints, the company may not always be able to have a company employee at the Reception Centre before evacuees begin arriving. In this case this cover page can be included with the forms on the next 2 pages and sent to a representative at the Reception Centre to provide them with guidance on how to register and track evacuees until a company representative arrives.

Evacuee registration guidelines

[Insert Company Name] requires your assistance with receiving evacuees at the following Reception Centre: _____

Your company contact is:

Name: _____   Position: _____   Contact Number: _____   Fax Number: _____

1) Record all evacuees as they arrive on the forms provided.
2) Provide all evacuees with the statement below and any other status updates as provided by your company contact.
3) Provide the evacuees with food and lodging as required.
4) Record if any evacuees choose to leave the Reception Centre (name, contact number, where are they going, etc.).
5) Continually update the company of any residences arriving at or leaving the Reception Centre so that they can follow up on any residents that are unaccounted for.

B1 Reception Centre Registration Log

H2Safety

Date: _____   Responder Name: _____

Page _____ of _____   Responder Position: _____ Responders Phone No.: _____

Resident ID	Name (list all names in party)		# Of Occupants	Number arrived	Arrival time	Depart time	Destination phone # (where they can be reached)	Comments
	First	**Last**						

B2 Resident Compensation Log

H2Safety

Resident's Name:	Home Address:	Home Telephone #:	Location of Land (LSD):
		Business Telephone #:	
Number of Residents Evacuated:	Evacuated to:	Telephone # While Evacuated:	

No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	Details of Expense
Total Reported Expenses									

Approved By: _____   Date: _____

B2 Resident Compensation Log

Resident's Name:	Home Address:	Home Telephone #:	Location of Land (LSD):
		Business Telephone #:	
Number of Residents Evacuated:	Evacuated to:	Telephone # While Evacuated:	

No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	Details of Expense
Total Reported Expenses									

Approved By: _____   Date: _____

B3 Resident Contact Log

H₂Safety

Date: _____   Responder Name:_____

Page _____ of _____   Responder Position: _____ Responders Phone No.: _____

Time	Resident name	Resident ID	Shelter / Evacuate	Number of people		Assistance or transportation required?	Comments
				Inside	Outside		
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	

B3 Resident Contact Log

H2Safety

Time	Resident name	Resident ID	Shelter / Evacuate	Number of people		Assistance or transportation required?	Comments
				Inside	Outside		
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	
			○ Shelter ○ Evacuate			○ Yes ○ No	

B4 Roadblock Log

Date: _____   Responder Name:_____

Page _____ of _____   Responder Position: _____ Responders Phone No.: _____

Only emergency responders should be allowed to enter the Emergency Planning Zone (EPZ).

Vehicle Type	License plate # and province / state	Name of driver (if available)	# of people in vehicle	Time entering Zone	Time Exiting Zone	Comments (record all vehicles turned away)

Vehicle type	License plate # and province / state	Name of driver (if available)	# of people in vehicle	Time entering zone	Time Exiting zone	Comments (record all vehicles turned away)

DATE: _____

TIME: _____

EVACUATION NOTICE

[Insert Company Name] **has an emergency at its nearby location.**

As a safety precaution, please leave the area in a

(north / east / south / west) direction and proceed to the

Reception Centre located at

_____.

[Insert Company Name] representatives will be available at the Reception Centre to address your questions or concerns.

For assistance, call [Insert Company Name] at

_____.

Thank you for your cooperation.

B6 Early Notification / Voluntary Evacuation Phone Message

Before calling, determine a safe evacuation route for the residents to travel, away from the emergency hazard area, upwind if possible, towards the reception centre.

Hello, this is _____ *(your name)* _____ calling from _____ *(company name)* _____.

Is this the _____ *(name of residence / business)* _____ at _____ *(telephone number)* _____?

_____ *(company name)* _____ is responding to a *(potential)* emergency at _____ *(location)* _____ in your area.

You are in no danger at this time. All efforts are being made to resolve the problem and this phone call is only to inform you and provide you with an early notification.

To help us understand and your immediate needs we need to know:

How many people are at your location now?

Adults _____

Children _____

Do you wish to leave your residence at this time?

If Yes Please travel in a *north / east / south / west* direction to our reception centre located at:

_____

If No Please standby for further contact. Please do not use your telephone for outgoing calls as this may prevent us from contacting you with updated information or when the problem has been eliminated.

If you have urgent questions, please contact _____ *(company name)* **at** _____ *(telephone number)* .

Thank you for your cooperation.

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

B7 Shelter-In-Place Phone Message

Hello, this is _____ *(your name)* _____ of _____ *(company name)* _____ .

Is this the _____ *(name)* _____ residence at _____ *(telephone number)* _____ ?

_____ *(company name)* _____ is responding to a (*potential*) emergency at _____ *(location)* _____ in your area.

For your safety, it is extremely important that you, and those with you, stay indoors until the potential hazard no longer exists, or you are advised to evacuate.

To help us understand your immediate needs, we need to know:

How many people are at your location now?

Adults _____

Children _____

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to get in doors or stay out of the area?

☐ *Yes*   ☐ *No*

If Yes   *Whom?* _____

Location of the person(s) _____

We will send someone to find them as soon as possible.

Do you have children in school at this time?

☐ *Yes*   ☐ *No*

If Yes   *What school?* _____

Children's names _____

We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.

Do you have the "Shelter-in-Place" instructions previously provided to you by *(company name)* **?**

☐ *Yes*   ☐ *No*

If Yes   Please follow the Shelter-in-Place instructions located inside the resident pamphlet.

If No   *Verbally walk the resident through the Shelter-in-Place instructions on the next page.*

Do you understand what I have told you?

Is there an alternate number we can contact you at? _____

If you have any urgent questions, please contact *(company name)* **at** *(telephone number)* .

Thank you for your cooperation.

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

Shelter-In-Place Instructions

For your safety:

- Immediately gather everyone indoors and stay there

- Close and lock all windows and outside doors

    - If convenient, tape the gaps around the exterior door frames

- Leave open all inside doors

- Extinguish indoor wood burning fires

    - If possible, close flue dampers

- Turn off appliances or equipment that either:

    - Blows out or uses indoor air, such as:

        - Bathroom and kitchen exhaust fans

        - Built-in vacuum systems

        - Clothes dryers

        - Gas fireplaces and gas stoves

    - Sucks in outside air, such as:

        - Heating, ventilation and air conditioner (HVAC) systems for apartments, commercial or public facilities

        - Fans for heat recovery ventilators or energy recovery ventilators (HRV / ERV)

- Turn down furnace thermostats to the minimum setting and turn off air conditioners

- Avoid using the telephone, except for emergencies, so that you can be contacted by company emergency response personnel

- Call the company emergency numbers you have been provided:

    - If you are experiencing symptoms or smelling odours (so that we can address your concerns and adjust our response priorities)

    - If you have contacted fire, police or ambulance (so that we can coordinate our response)

- Stay tuned to local radio and television for possible information updates

- Do not leave your residence, even if you see people outside, until you are told to do so

- After the hazardous substance has passed through the area you will receive an "all-clear" message from the company emergency response personnel. You may also receive, if required, instructions to:

    - Ventilate your building by opening all windows and doors; turning on fans and turning up thermostats. During this time the air outside may be fresher and you may choose to leave your building while ventilating.

    - Once the building is completely ventilated return all equipment to normal settings & operation.

- Do not leave your sheltered location or attempt to start any vehicle until a company representative advises you that the area is safe.

If you are unable to follow these instructions, please notify company emergency response personnel.

B8 Evacuation Phone Message

Before calling, determine a safe evacuation route for the residents to travel, away from the emergency hazard area, upwind if possible, towards the reception centre.

Hello, this is _____ *(your name)* _____ of _____ *(company name)* _____ .
Is this the _____ *(name)* _____ residence at _____ *(telephone number)* _____ ?
*(Company name)* is responding to a *(potential)* emergency at _____ *(location)* _____ in your area.
For your safety, it is extremely important that you and your family leave your residence immediately and travel in a *north / east / south / west* direction to our reception centre located at:
_____

To help us understand your immediate needs, we need to know:

How many people are at your location now?

Adults_____

Children_____

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to evacuate away from the area?

❏ *Yes*   ❏ *No*

If Yes   *Whom?* _____

Location of the person(s) _____

We will send someone to find them as soon as possible.

Do you have children in school at this time?

❏ *Yes*   ❏ *No*

If Yes   *What school?* _____

Children's names _____

We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.

Do you require evacuation / transportation assistance?

❏ *Yes*   ❏ *No*

If Yes   We are sending someone to assist you. Please stay indoors and close all doors and windows until a Rover or the local police arrive to evacuate you.

If No   *Provide the resident with:*

☐ *Directions to safely travel to the reception centre*

☐ *A list of items to bring with them to the reception centre (medications, cell phone, etc.)*

☐ *An idea of how long they may be expected to stay at the reception centre*

☐ *The option to bring their house pets to the reception centre*

Please contact _*(company name)*_ if you are unable to make it to the reception centre for any reason. Please keep your phone line free so that we can contact you if necessary.

Is there an alternate number we can contact you at? _____

A company representative at the reception centre will address any questions you may have and will make arrangements for your temporary accommodations. Do you understand everything I have told you? Are you leaving immediately?

If you have any urgent questions, please contact _____ *(company name)* _____ **at** _*(telephone number)*_ .
Thank you for your cooperation.

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

Section 6: Forms

C1 Preliminary Media Statement

Date:(YY/MM/DD)	Responder Name:
Responder Position:	Responder Phone No.:

This is the information I can give you so far:

At_____*(time – 24hr local clock)*_____ on (date),_____*a(n) (fire, explosion, gas release, spill)*_____ occurred at the Company's_____*(location name)*_____ site, located _____*(distance)* kilometres _____*(east / west / north / south)* of_____*(nearest town or city)*_____.

Presently,_____*(number of personnel)*_____ workers are being treated for injuries. The names and condition of the injured cannot be released until their families have been contacted.

The_____*(well site, plant, pipeline, office, drilling location)*_____ has been_____*(shut down, isolated, or is still flowing)*_____.

Company staff have been activated and are directing emergency response procedures to protect the public, our workers and the environment.

The cause of the _____*(fire, explosion, gas release, spill)*_____ is not yet known and no estimate of damage is available. As information becomes available, news releases will be issued from the Information Office.

Any further inquiries should be directed to the Emergency Support Team, who will issue a press release at a later time.

Contact:

_____   Office: _____

_____   Fax: _____

*Note: Only the **Media Spokesperson** designated by the Emergency Support Team is to provide any specific information to the public or the media. Refer to page 3 of Section 3: Communications & Media for the generic media statement to be used by all other response personnel.*

C2 Media Contact Log

H2Safety

Date: _____   Responder Name:_____

Page _____ of _____   Responder Position: _____ Responders Phone No.: _____

If you feel you are not the appropriate person to be answering the media agencies questions, use the following series of statements.

"[Insert Company Name] has an Information Officer to answer all media questions."

"May I request the following information to expedite your request?" (complete the form below).

"Thank you. [Insert Company Name] appreciates your cooperation and I will pass on this information to the appropriate person."

Time	Call To	Call From	Media Outlet	Reporter / Contact Name	Telephone Numbers		Remarks / Information Required
					Work	**Fax**	

Document all key events, conversations, and meetings on this form. Where lengthy notes are necessary, use additional copies or the back of the page.

C2 Media Contact Log

Time	Call To	Call From	Media Outlet	Reporter / Contact Name	Telephone Numbers		Remarks / Information Required
					Work	Fax	

C3 Government Agency Contact Log

H2Safety

Date: _____   Responder Name:_____

Page _____ of _____   Responder Position: _____ Responders Phone No.: _____

If you feel you are not the appropriate person to be answering the media agencies questions, use the following series of statements.

"[Insert Company Name] has a Government Liaison to answer all media questions."

"May I request the following information to expedite your request?" (complete the form below).

"Thank you. [Insert Company Name] appreciates your cooperation and I will pass on this information to the appropriate person."

Time	Call To	Call From	Agency	Contact Name	Telephone Numbers		Remarks / Comments
					Work	**Fax**	

Document all key events, conversations, and meetings on this form. Where lengthy notes are necessary, use additional copies or the back of the page.

C3 Government Agency Contact Log

Time	Call To	Call From	Agency	Contact Name	Telephone Numbers		Remarks / Comments
					Work	Fax	

Location

Address: _____

City / Town: _____

Phone #: _____

Contact Name: _____

Office #: _____

Home #: _____

Map or Directions to Site

SIZE-UP & INITIAL ACTIONS
(Complexity Analysis)

REFERENCE YOUR ERP

1. LEVEL OF EMERGENCY
2. INTERNAL NOTIFICATION
3. EXTERNAL NOTIFICATION
4. START ICS-201 (PAGE 1)
5. INITIATE PUBLIC SAFETY

PRIORITIES
These Top 3 Priorities never change.
Select a 4th priority when the situation permits.

PROBLEMS
What you know and observe of the incident. Every problem MUST relate to one of the priorities, if you cannot show how it affects a priority, then it is not a problem. This may clarify who has to deal with the problem.

OBJECTIVES
What you are going to do? Determining solutions to your problems to assist in creating the objective.
Specific—State what's to be accomplished
Measurable—Include a standard
Action Oriented—Requires you to do something
Realistic—Not everything can be done in a day
Time Sensitive—Day and time objective will be met

SMART

STRATEGIES
How you will accomplish the Objective. Strategies are NOT time specific like an Objective is. Strategies are never time restricted because more than one strategy can be used at the same time. Having multiple strategies is great because if Plan A doesn't work, then use Plan B.

TACTICS
Specifies how the strategies will be executed. Tactics are always operations and the Incident Commander will leave it to the Operations Section Chief to work with those doing the job.

RESOURCES
What resources are required to accomplish the strategies. This step will assist in the development of your organizational chart.

PRIORITIES	PROBLEMS		OBJECTIVES	STRATEGIES	TACTICS	RESOURCES
Life Safety		1		1 2 3		
Incident Stabilization		2		1 2 3		
Property Environment Preservation		3		1 2 3		
Economy Reputation Evidence Other		4		1 2 3		
		5		1 2 3		

P **P** **O** **S** **T**

H2Safety

Appendices

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Appendix A: ERP Scope, Training and Plan Maintenance

Scope

This plan defines the emergency response process related to all hazards affecting petroleum operations. This Emergency Response Plan (ERP) outlines the process for an Alert/Minor, Level-1, Level-2, or Level-3 emergency for any jurisdiction or incident type.

Plan Objectives

The primary objective of this Emergency Response Plan (ERP) is to define the incident management system and organizational structure, process and tools to respond effectively to all incidents regardless of size or complexity. It has been designed to be intuitive and have natural process flow utilizing the Incident Command System (ICS) and to comply with applicable regulations, standards, and industry best practices.

Purpose

This ERP clearly defines emergency response team roles, functions and duties to protect people, environment, and assets during an incident. This plan clarifies the following:
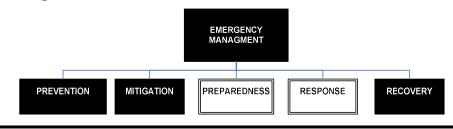
- Overall Incident Command System (ICS) response organization.
- Incident Command System (ICS) Roles and responsibilities.
- Guidance to determine the Alert or Emergency Level.
- Mechanisms to activate the ERP.
- Notification /communication requirements to stakeholders (public /government /responders).
- Documentation tools for accurate records management of events and decisions during an event.
- Guidance for post-emergency actions.

The intent of this Emergency Response Plan (ERP) is to define effective measures in place to:

- Notify and protect the workers and the public.
- Minimize environmental impact.
- Minimize asset and property loss.
- Regain steady state of operations.
- Minimize emergency response time.
- Maximize response effectiveness.
- Coordinate with government agencies and stakeholders.
- Minimize business and reputational impact.

This manual outlines the framework, tools and reference materials to facilitate a prompt, safe, efficient and properly managed response to all incidents regardless of size or complexity. Therefore this plan provides employees and contractors with practical tools that will guide them through the Preparedness and Response principles of Emergency Management.

Emergency Management Process Flow

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WHITECAP
RESOURCES INC

HEALTH, SAFETY, SECURITY, ENVIRONMENT AND COMMUNITY POLICY

Whitecap Resources Inc. ("Whitecap") is committed to the health, safety of our employees, contractors and the public, and the integrity and security of our assets and property. We are also firmly committed to conduct our operations in a way that will minimize any adverse impacts to our environment. Whitecap fulfills these commitments through compliance with all relevant regulations and the development and implementation of an effective health, safety, security and environmental program. This program applies to all Whitecap's operations and:

- Provides and maintains a safe work environment with proper policies, procedures, standards, training, equipment and emergency response procedures in accordance to all government regulations and industry practices;

- Provides appropriate health, safety, security and environmental training;

- Applies operational processes and asset integrity systems designed to minimize the frequency and volume of environmental spills and reduce emissions and ensure public safety;

- Implements operational measures to reduce waste and optimize energy usage;

- Ensures timely and effective response and follow up to incidents, identified hazards and near misses resulting from our operations and implements incident investigations to identify root causes and share learnings. Personnel are encouraged to report hazards, incidents and near misses and granted immunity from disciplinary action;

- Establishes operational, health, safety, security, and environmental performance targets intended to drive behaviour and performance improvement; and

- Includes regular reviews of the effectiveness of our programs to ensure continuous improvement.

All management, employees, contractors, subcontractors and suppliers engaged on behalf of Whitecap are responsible for following Whitecap's health, safety, security and environment program as required and participating in pertinent safety and environmental training. We strongly encourage individuals to stop work if an unsafe act or condition is identified.

Community Policy

- Whitecap is committed to consulting community stakeholders in advance of project development and making meaningful efforts to resolve concerns and mitigate impacts.

- Whitecap will communicate regularly with communities and landowners in proximity to our operations and listen to and consider all concerns raised by these legitimate stakeholders.

- Whitecap believes in enhancing the communities where employees live and work, by supporting causes that focus on improving health and education for children.

By fulfilling the commitments in this policy, Whitecap's employees, contractors, subcontractors and suppliers will share in the benefits of a safe workplace and contribute to an organization that is environmentally and socially sustainable.

Approved by the Board of Directors on June 12, 2020

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Appendix A: ERP Scope, Training and Plan Maintenance, continued

Training Requirements

Frequency / Action	As Required	Semi-Annually	Annually*	Every Three (3)	Every Five (5) Years***
Training					
Employee Orientation New / Transfer	✓				
On-the-job Training	✓				
Response Discussion During Pre-Job Meetings	✓				
Drills	✓				
Tabletop Exercise			✓ one of these exercises		
Communication / Partial Mobilization Exercises					
Major (Full Scale) Exercise	✓ Start-up of facility or transmission line (OGC)			✓	✓
Post Incident (Actual) Review	✓				
ERP Review / Self Audit		✓			

* Must be held annually.

** CSA Z246.2-18, CER, OGC & AER requires Major Exercises be held every three (3) years.

*** Environment & Climate Change Canada (ECCC) requires Major Exercises be held every five (5) years for facilities with E2 required substances.

Appendix A: ERP Scope, Training and Plan Maintenance, continued

Plan Maintenance

Responsibility

The licensee is responsible to ensure that an ERP is created for all provincial and federally regulated oil and gas activities (i.e. sour operations, HVP pipelines, cavern storage facilities, etc.), they are maintained regularly, and any updates are disseminated to the regulatory agency and other plan holders as required. In order for this to occur the following responsibilities are designated:

- Each individual plan holder is responsible for ensuring their assigned manuals are current, all updates are applied / downloaded / inserted, and any errors or omissions are reported to a supervisor.

- Each Area Manager is responsible for ensuring that a semi-annual review of their ERP is conducted. The ERP Revision Request Form is located in this section and can be used to track this information and provide documentation in the case of an ERP assessment.

- Any requests for revisions to this plan should be forwarded to the applicable Area Manager for review. These revisions will be discussed with the company's Emergency Response Program Coordinator and H_2Safety Services Inc. Any significant changes including those resulting from exercises and incidents will require immediate updates sent out to all plan holders; less significant changes will be implemented during the ERP's next annual update.

- The company's Emergency Response Program Coordinator is responsible for ensuring that the plans and distribution lists are updated, training is performed, and new projects are included in the plan. Information in this plan will be verified and updated at least once a year.

- Old manuals must be sent to H_2Safety Services Inc. or destroyed. If a plan holder no longer requires their manual (job changes, position changes, etc.), it must be returned to the company's Emergency Response Program Coordinator to be tracked, reassigned, or destroyed.

The licensee must distribute changes in information that are instrumental to implementing the ERP to all required plan holders.

Errors identified in the ERP by the regulatory agency, licensee, and other party must be corrected immediately upon identification.

Modifications to New or Existing Operations

The licensee must submit a supplement for review and approval to the regulatory agency for all newly added wells, pipelines, well / pipeline tie-ins, facilities and operating areas prior to commencement of operations if there are new surface developments within the Emergency Planning Zone. For example, the EPZ for a new pipeline tie-in does not fall entirely within the existing Emergency Planning Zone and impacts a new residence / public facility / trapper cabin / etc. that was not previously included in the Emergency Response Plan. The licensee must conduct a public involvement program for all new members of the public. Before any new or major modifications to an existing facility / pipeline are brought on-stream, any additions or changes will be added to the Emergency Response Plan. If required, a site specific Emergency Response Plan will be developed. Meetings to review response plan requirements must be held before major facility modifications are commissioned.

Appendix A: ERP Scope, Training and Plan Maintenance, continued

ERP Revision Request Form

Plan Holder Name / Title / Company: _____

ERP Name: _____

Manual Number: _____

If any of the following items have changed, please check the box beside it and provide a description of the change in the space provided:

- ☐ Company information
- ☐ Mapping information
- ☐ Resident contact information
- ☐ Response staff information or capacity changes
- ☐ Facility additions, such as well or pipeline tie-ins
- ☐ Other

Description of the change:
Please attach additional pages and/or support documentation as required.

_____

_____

_____

_____

_____

_____

_____

Please return the completed checklist to:

H$_2$Safety Services Inc.
210, 7260 – 12 Street SE
Calgary, AB T2H 2S5
Email: erp@h2safety.ca
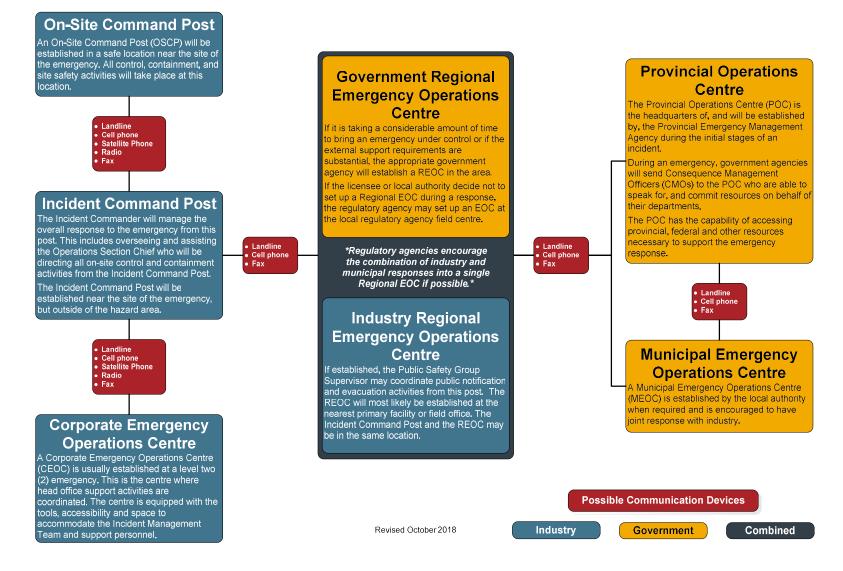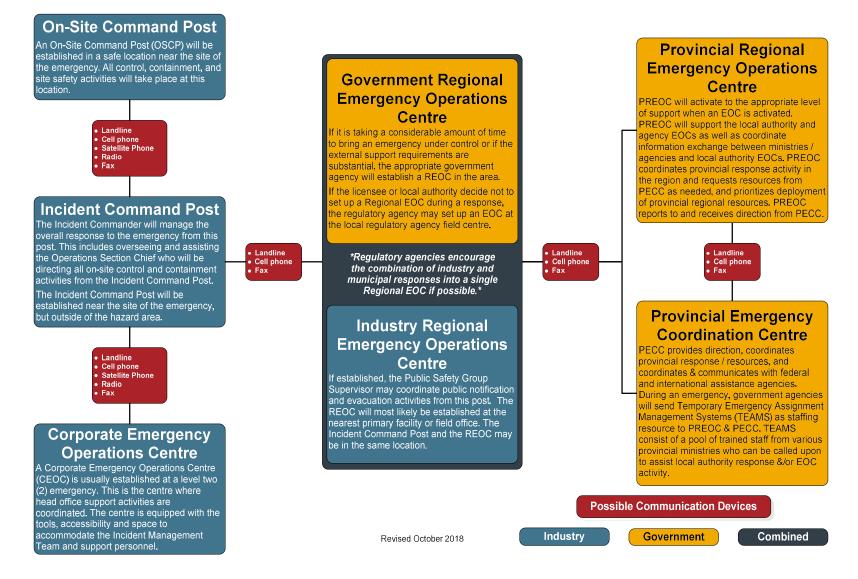Fax: 403-313-9180

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Appendix B: Incident Command Post (ICP)

Communication Methods Between Command Posts - Alberta

On-Site Command Post

An On-Site Command Post (OSCP) will be established in a safe location near the site of the emergency. All control, containment, and site safety activities will take place at this location.

- Landline
- Cell phone
- Satellite Phone
- Radio
- Fax

Incident Command Post

The Incident Commander will manage the overall response to the emergency from this post. This includes overseeing and assisting the Operations Section Chief who will be directing all on-site control and containment activities from the Incident Command Post.

The Incident Command Post will be established near the site of the emergency, but outside of the hazard area.

- Landline
- Cell phone
- Fax

- Landline
- Cell phone
- Satellite Phone
- Radio
- Fax

Corporate Emergency Operations Centre

A Corporate Emergency Operations Centre (CEOC) is usually established at a level two (2) emergency. This is the centre where head office support activities are coordinated. The centre is equipped with the tools, accessibility and space to accommodate the Incident Management Team and support personnel.

Government Regional Emergency Operations Centre

If it is taking a considerable amount of time to bring an emergency under control or if the external support requirements are substantial, the appropriate government agency will establish a REOC in the area.

If the licensee or local authority decide not to set up a Regional EOC during a response, the regulatory agency may set up an EOC at the local regulatory agency field centre.

Regulatory agencies encourage the combination of industry and municipal responses into a single Regional EOC if possible.

Industry Regional Emergency Operations Centre

If established, the Public Safety Group Supervisor may coordinate public notification and evacuation activities from this post. The REOC will most likely be established at the nearest primary facility or field office. The Incident Command Post and the REOC may be in the same location.

Provincial Operations Centre

The Provincial Operations Centre (POC) is the headquarters of, and will be established by, the Provincial Emergency Management Agency during the initial stages of an incident.

During an emergency, government agencies will send Consequence Management Officers (CMOs) to the POC who are able to speak for, and commit resources on behalf of their departments.

The POC has the capability of accessing provincial, federal and other resources necessary to support the emergency response.

- Landline
- Cell phone
- Fax

- Landline
- Cell phone
- Fax

Municipal Emergency Operations Centre

A Municipal Emergency Operations Centre (MEOC) is established by the local authority when required and is encouraged to have joint response with industry.

Possible Communication Devices

| Industry | Government | Combined |

Revised October 2018

Appendix B: Incident Command Post (ICP), continued

Communication Methods Between Command Posts - British Columbia

On-Site Command Post
An On-Site Command Post (OSCP) will be established in a safe location near the site of the emergency. All control, containment, and site safety activities will take place at this location.

- Landline
- Cell phone
- Satellite Phone
- Radio
- Fax

Incident Command Post
The Incident Commander will manage the overall response to the emergency from this post. This includes overseeing and assisting the Operations Section Chief who will be directing all on-site control and containment activities from the Incident Command Post.

The Incident Command Post will be established near the site of the emergency, but outside of the hazard area.

- Landline
- Cell phone
- Satellite Phone
- Radio
- Fax

Corporate Emergency Operations Centre
A Corporate Emergency Operations Centre (CEOC) is usually established at a level two (2) emergency. This is the centre where head office support activities are coordinated. The centre is equipped with the tools, accessibility and space to accommodate the Incident Management Team and support personnel.

Government Regional Emergency Operations Centre
If it is taking a considerable amount of time to bring an emergency under control or if the external support requirements are substantial, the appropriate government agency will establish a REOC in the area.

If the licensee or local authority decide not to set up a Regional EOC during a response, the regulatory agency may set up an EOC at the local regulatory agency field centre.

- Landline
- Cell phone
- Fax

Regulatory agencies encourage the combination of industry and municipal responses into a single Regional EOC if possible.

Industry Regional Emergency Operations Centre
If established, the Public Safety Group Supervisor may coordinate public notification and evacuation activities from this post. The REOC will most likely be established at the nearest primary facility or field office. The Incident Command Post and the REOC may be in the same location.

Provincial Regional Emergency Operations Centre
PREOC will activate to the appropriate level of support when an EOC is activated. PREOC will support the local authority and agency EOCs as well as coordinate information exchange between ministries / agencies and local authority EOCs. PREOC coordinates provincial response activity in the region and requests resources from PECC as needed, and prioritizes deployment of provincial regional resources. PREOC reports to and receives direction from PECC.

- Landline
- Cell phone
- Fax

Provincial Emergency Coordination Centre
PECC provides direction, coordinates provincial response / resources, and coordinates & communicates with federal and international assistance agencies. During an emergency, government agencies will send Temporary Emergency Assignment Management Systems (TEAMS) as staffing resource to PREOC & PECC. TEAMS consist of a pool of trained staff from various provincial ministries who can be called upon to assist local authority response &/or EOC activity.

Possible Communication Devices

Industry | Government | Combined

Revised October 2018

Appendix B: Incident Command Post (ICP), continued

ICP Activation and Setup

The Incident Command Post is activated by the Incident Commander.

The following tasks must be addressed once the ICP has been activated:

Position	Task
Incident Commander	☐ Establish briefings with the Field Response Team (FRT). ☐ Ensure staffing is adequate for the task(s). ☐ Consider the time difference, if applicable, and determine how time will be communicated throughout the incident.
Safety Officer	☐ Ensure the room / floor / building is secure. ☐ Ensure a safe work area, i.e. remove clutter or cords causing slips, trips, falls, etc.
Information Officer	☐ Notify the receptionist that there is an incident. Provide details of what message should be given out to the public and media, as well as where to direct incoming calls. ☐ Ensure inbound and outbound calls received or made are centrally logged. ☐ Ensure responders have their office phones forwarded to their cell phones.
Logistics / IT Support	☐ Turn on all computers; ensure the relevant systems are operational and that they all have internet/email access. ☐ Bring up any ERP related electronic tools (ie; **H₂CommandCentre**) and ensure they are working and that they can all be displayed on various projectors / screens as required. ☐ Check that printers are connected to the computers and working. Print a test page to confirm. ☐ Check that the fax machine is setup and working. ☐ Check that any phone conferencing systems are set up and working. ☐ Ensure that telephone lines are available and active. ☐ Ensure TVs are working properly and set up to local news or CNN. ☐ Obtain any additional equipment as required.
Logistics / Security	☐ Ensure the room/floor/building is secure. Arrange for additional security if required. ☐ If the location of the Incident Command Post is closed to general staff, provide a list of staff needing access clearance to the meeting area. ☐ The following supplies should be available: notepaper, pens, printer cartridges and paper, documentation forms, dry erase markers, staplers and staples, spare power bars and extension cords, etc. ☐ Arrange for refreshments (coffee, food, water, etc.) for those working there, as well as sleeping space if required. ☐ Ensure there are sufficient tables and chairs for the team.

Appendix B: Incident Command Post (ICP), continued

ICP Activation and Setup, continued

Position	Task
Planning / Documentation	☐ Determine which emergency response plans and other ERP tools are needed and pull them out to be readily accessible.
	☐ Determine what laminated maps and charts are going to be utilized and put them up on the wall with dry erase markers. Set up the white boards and roles chart.
	☐ Ensure clocks are displaying the correct time, including any clocks with a different time zone.
	☐ As each person arrives: provide them with a vest, provide them with a print out of the Initial Emergency Report Form, ensure they synchronize their watches and ensure they check in with their assigned supervisor.
	☐ As team members arrive, write their name in the appropriate position on the Field Response Team Assignment Chart.
	☐ Pass out documentation forms and provide an overview of the documentation process.
	☐ Ensure the latest contact list for Field Response Team members are available.
	☐ Begin documenting all actions, decisions and major events. Start-up **H₂CommandCentre** if available.
	☐ Continually update the laminated maps and charts as information becomes available (Field Response Team Assignment Chart, Emergency Status Board, etc.).
	☐ Post a schedule of events, including shift changes and status updates.

Incident Command Post Briefings

Once the ICP has been activated and team members arrive, the Incident Commander or Deputy needs to conduct an initial briefing to provide the team with the status of the situation, establish operational periods for the ICP, establish a meeting schedule for both a planning meeting and periodic briefings and outline broad goals to guide the ICP throughout the emergency.

In additional to periodic briefings for status updates, the Incident Commander also has to conduct a meeting once the approved Incident Action Plan is in place. This meeting will outline the planned objectives and tasks and will ensure that resources required for implementation of the action plan are in available or en route.

At the end of each operational period, all departing members of the Field Response Team will be debriefed and must brief their replacements.

Documentation

It is critical to ensure that all ICP documentation is compiled, properly stored and readily available after the event. Proper documentation will aid in investigations, inquiries, debriefs and support for financial claims and budgets. Everything that happens during the Response/Recovery Operations should be recorded at the ICP. The forms at the back of this manual are designed to aid in this process.

Appendix C: Toxic Gases

Hydrogen Sulphide (H₂S)

Background

Hydrogen sulphide (H_2S) is a flammable, colourless gas with a characteristic odour of rotten eggs that people can smell at low levels. It is also known as hydrosulphuric acid and sewer gas. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases and hot springs. It can also result from bacterial breakdown of organic matter. Industrial sources include emissions from industrial paper plants; combustion of coal, fuel oil and natural gas (including gas flares); kraft paper mills; tanneries; and emissions from sewers and waste treatment facilities. Cigarette smoke is also a source of hydrogen sulphide.

H_2S is released primarily as a gas and spreads in the air. Its residence time in the atmosphere ranges from about one day to more than 40 days, depending on ambient temperature and other atmospheric variables, including humidity, sunshine and presence of other pollutants. The decreased temperatures and decreased levels of hydroxyl ions in northern regions in winter increase the residence time. When released H_2S gas is ignited, it will change into sulphur dioxide (SO_2), be carried into the atmosphere and dispersed over a larger area at lower concentrations.

Signs and Symptoms

Exposure to hydrogen sulphide may cause irritation to the eyes, nose or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulphide can cause a loss of consciousness and possibly death. In most cases, the person appears to regain consciousness without any other effects. However, in some individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of hydrogen sulphide (0.00011-0.00033 ppm).

Acute Exposure Effects

The effects on humans will vary depending on the duration and H_2S concentration of exposure. The health effects of acute exposure to H_2S are shown in the following table. Acute exposure reflects a range from a few seconds up to several weeks.

Hydrogen Sulphide Toxicity Table (BC Regulations)

Concentration (ppm)	Effects
Less than 1	Most people smell "rotten eggs".
3 – 5	Odour is strong.
20 – 150	Nose and throat feel dry and irritated. Eyes sting, itch or water and "gas eye" symptoms may occur. Prolonged exposure may cause coughing, hoarseness, shortness of breath and runny nose.
150 – 200	Sense of smell is blocked (olfactory fatigue).
200 – 250	Major irritation of the nose, throat and lungs, along with headache, nausea, vomiting and dizziness. Prolonged exposure can cause fluid buildup in the lungs (pulmonary edema), which can be fatal.
300 – 500	Symptoms are the same as above, but more severe. Death can occur within 1-4 hours of exposure.
Above 500	Immediate loss of consciousness. Death is rapid, sometimes immediate.

Adapted from Hydrogen Sulfide in Industry, WorkSafe BC February 2010

Appendix C: Toxic Gases, continued

Acute Health Effects of Hydrogen Sulphide (AB Regulations)

Concentration in Air (ppm)	Description of Potential Health Effects
1	A noticeable odour that may be offensive to some individuals. People may temporarily experience mild symptoms of discomfort, including nausea, headache, and irritability due to the odour. Asthma symptoms may worsen.
10 – 20	An obvious offensive odour. Temporary eye irritation may occur after a single exposure and last several hours. Symptoms include mild itchiness, dryness, increased blink reflex and slight watering. Some people may experience headaches, nausea and vomiting. Symptoms of asthma, bronchitis or other forms of chronic respiratory disease may worsen.
50	A strong, intense offensive odour that may irritate eyes and breathing passages. Eyes may be itchy, stinging, and red with increased blinking, tearing and tendency to rub eyes. Breathing passages could feel tingly or sting, with increased tendency to clear throat and cough. Symptoms of pre-existing respiratory disease may worsen. No permanent injury to eyes or breathing passages is expected unless exposure is prolonged. Odour–sensitive individuals may experience headaches, nausea, vomiting and diarrhea.
100	Initially there is a strong objectionable odour that lessens with prolonged exposure due to olfactory "fatigue." Eyes and breathing passages are often irritated within one hour of exposure. Eyes may be sore, stinging, burning, tearing, redness, swelling of eyelids, and possible blurred vision. Respiratory irritation may include sore throat, cough, soreness or stinging of breathing passages, and wheezing. The symptoms of asthma, bronchitis or other forms of chronic respiratory disease will worsen. Odour may cause headache, nausea, vomiting and diarrhea.
250	There may or may not be an odour present due to olfactory paralysis. Eyes and breathing passages will become irritated within minutes of exposure, and the irritation will worsen with longer exposure. The outer surface of the eyes and inner eyelids will be inflamed, red and sore. Eyes will begin watering and tearing immediately and vision may be blurred. Eyes may be permanently harmed if exposure is prolonged. Respiratory irritation will include sore throat, cough, difficulty breathing, soreness of chest, and wheezing. Asthma symptoms will worsen. People may experience "systemic" effects, including headache, nausea and vertigo depending on duration of exposure.
500	No odour is present due to olfactory paralysis. Severe irritation and possible permanent injury to the eyes and breathing passages within 30 minutes of exposure. Lung and breathing passage damage may cause 'chemical pneumonia' following exposure if the exposure was prolonged. Systemic effects involving the central nervous system may occur within one hour of exposure and include headache, anxiety, dizziness, loss of coordination and slurred speech. People may lose consciousness or collapse suddenly, and die if exposure persists.

Appendix C: Toxic Gases, continued

Acute Health Effects of Hydrogen Sulphide (AB Regulations), continued

Concentration in Air (ppm)	Description of Potential Health Effects
750	No odour is present due to olfactory paralysis. Central nervous system effects will be most obvious, and could include anxiety, confusion, headache, slurred speech, dizziness, stumbling, loss of coordination, and other signs of motor dysfunction. People may lose consciousness, collapse suddenly and possibly die, if exposure continues for more than a few minutes. Lung and breathing passage damage will likely cause 'chemical pneumonia' among survivors.
1000	Immediate "knock-down" and loss of consciousness. Death within moments to minutes. Immediate medical attention needed if victim is to survive.

Adapted from: Technical Advisory Committee on Public Health and the Oil and Gas Industry, Environmental Public Health Manual for Oil and Gas Activities in Alberta, 2007

Source: Alberta Health Services, Environmental Public Health
http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf

Appendix C: Toxic Gases, continued

Chronic Exposure Effects of Hydrogen Sulphide

Chronic effects from H_2S exposure is a developing area of research. Chronic exposure may inflame and irritate the upper respiratory tract.

Medical treatment for hydrogen sulphide exposure

(Please note: This information was provided by a medical source other than the Provincial Regional Health Authorities. See Hydrogen Sulphide (H_2S) Guidelines - Revised November 2000)

Guidelines for in Hospital Assessment/Treatment of Possible Hydrogen Sulphide Exposure

This is provided to assist medical staff in assessing a worker who has a possible or actual H_2S exposure.

Section I provides information on H_2S

Section II summarizes possible health effects, which should be evaluated at the time of presentation

Section III depicts a summary of possible clinical management

Section IV provides a guideline regarding return to work (RTW) considerations

I. Hydrogen sulphide

H_2S is a colourless gas. It is heavier than air and tends to flow in ditches, trenches and low-lying areas.

H_2S is clearly recognizable in small concentrations at around one part per million (ppm) by its characteristic rotten egg smell.

At concentrations of about 150 ppm in the air, or after prolonged exposure to lower concentrations, the olfactory sense is paralyzed and the presence of H_2S can no longer be detected by odour.

II. Health effects of hydrogen sulphide

H_2S can be rapidly fatal. It acts by paralyzing the respiratory control centre in the brain and by inhibiting cellular respiration.

Hydrogen sulphide is a mucous-membrane and respiratory-tract irritant. Pulmonary edema, which may be immediate or delayed, can occur after exposure to high concentrations.

Acute exposure may include the following symptoms and signs:

Central Nervous System

CNS injury is immediate and significant after exposure to hydrogen sulphide. At high concentrations, only a few breaths can lead to loss of consciousness, coma, respiratory paralysis, seizures, and death. CNS stimulation may precede CNS depression. Stimulation manifests as excitation, rapid breathing, and headache; depression manifests as impaired gait, dizziness, and coma, possibly progressing to respiratory paralysis and death. In addition, decreased ability to smell occurs at 100 to 150 ppm.

Respiratory

Inhaled Hydrogen sulphide initially affects the nose and throat. Low concentrations (50 ppm) can rapidly produce irritation of the nose, throat, and lower respiratory tract. Pulmonary manifestations include cough, shortness of breath, and bronchial or lung hemorrhage. Higher concentrations can provoke bronchitis and cause accumulation of fluid in the lungs, which may be immediate or delayed for 24 hours or more. Lack of oxygen may result in cyanosis.

Appendix C: Toxic Gases, continued

Medical Treatment for Hydrogen Sulphide Exposure, continued

Cardiovascular

High dose exposure may cause insufficient cardiac output, irregular heartbeat and conduction abnormalities.

Renal

Although very unlikely, transit renal effect may include blood, casts, and protein in the urine. Renal failure as a direct result of hydrogen sulphide toxicity has not been described, although it may occur secondary to cardiovascular compromise.

Gastrointestinal

Symptoms may include nausea and vomiting.

Dermal

Prolonged or massive exposure may cause burning, itching, redness and painful inflammation of the skin.

Ocular

Eye irritation may result in inflammation (i.e. kerato-conjunctivitis) and clouding of the eye surface. Symptoms include blurred vision, sensitivity to light, and spasmodic blinking or involuntary closing of the eyelid.

Potential Sequelae

Inflammation of the bronchi can be a late development. Survivors of severe exposure may suffer psychic disturbances and permanent damage to the brain and heart.

III. Approach to the worker with suspected hydrogen sulphide exposure

Although this document refers only to H_2S, it is important for the clinician to keep in mind the possibility of co-exposure to numerous other agents. Sulphur dioxide may have been present if there has been combustion of hydrogen sulphide. Sulphur dioxide does not cause loss of consciousness but is a respiratory tract irritant. Therefore, the management of sulphur dioxide intoxication is similar to that for hydrogen sulphide. Other agents capable of causing asphyxia include carbon monoxide (toxic asphyxia) as well as a wide array of gases that act as simple asphyxiants (carbon dioxide, methane, nitrogen, etc.) by displacing oxygen. Finally, other conditions (MI, syncope, seizure, etc.) that may cause sudden collapse must be investigated and managed as appropriate.

History

The history is the key to the diagnosis of hydrogen sulphide (or other industrial) intoxication. There are two facets to the history in such cases:

Exposure history: This attempts to define, in qualitative terms, the likelihood of, and amount of exposure to hydrogen sulphide. This should include questions about work processes, the presence of a rotten egg odour and inquiring as to effects in co-workers. If possible, this should be supplemented by Industrial Hygiene information, which might include the triggering of alarms for hydrogen sulphide and historical data on air measurements. For suspected exposures, the workplace can often provide useful estimates regarding the level of exposure, although such data may require several days to reconstruct.

Clinical history: The physician should attempt to establish the presence of as many of the symptoms as possible associated with H_2S exposure. Determining the presence of respiratory tract irritation (conjunctivitis, rhinitis, tracheitis) is of particular importance since this symptom distinguishes hydrogen sulphide from several other asphyxiants and serious toxicity is unlikely in the absence of this symptom at presentation.

Investigations

There are no specific tests in routine clinical use to establish hydrogen sulphide intoxication. Rather, testing is aimed at characterizing the sequels of intoxication, as well as to rule out other causes for the presentation.

Appendix C: Toxic Gases, continued

Medical Treatment for Hydrogen Sulphide Exposure, continued

Treatment

Treatment is entirely supportive in nature and includes supplemental oxygen, managing eye and skin exposure as a chemical bum and maintenance of circulatory status. Although nitrite therapy has been advocated as an antidote, there is little evidence to support its use and as it is potentially dangerous it is not recommended.

On arrival - check blood gases and assess for lactic acidosis. Take chest film and repeat as necessary keeping in mind the delayed possibility of pulmonary edema. ECG may assist as arrhythmias and bradycardia are not uncommon. Temporary T wave depression may occur and ECG may mimic infarction.

For the unconscious patient, give oxygen using mechanical ventilation with positive end expiratory pressure.

Assess for associated musculo-skeletal and internal traumatic injury.

Maintain circulating fluid volume, but be alert for delayed onset of pulmonary edema.

At times, strong physical restraint may be required. Keep the patient as inactive as possible.

A pulmonary function test should be done near time of discharge and, if abnormal should be repeated at appropriate intervals thereafter.

If symptoms and/or exposure history are strongly clinically suggestive, because of the possibility of delayed pulmonary edema, adequate monitoring and follow-up for at least 24 hours is essential.

IV. Guidelines for Return to Work (RTW)

Three possible scenarios may be considered by the attending medical personnel:

Possible exposure, without symptoms

Possible exposure, with symptoms (that are compatible with H_2S)

Known exposure including "knockdown", with symptoms that require medical treatment and/or hospitalization.

In each scenario, a clinical decision about appropriate medical investigations, treatment, follow-up evaluation, and timing of return-to-work (RTW) will have to be made. It is emphasized that with scenarios (1) and (2), it may be preferable to either monitor the employee in the hospital or as an outpatient (with follow-up examination) for 24-48 hours prior to RTW.

Appendix C: Toxic Gases, continued

Sulphur Dioxide (SO2)

Background

Sulphur Dioxide (SO2) belongs to the family of sulphur oxide gases (SO2). Sulphur is prevalent in raw materials including crude oil and coal, as well as in ore that contains common metals. Sulphur oxide gases form when fuels containing sulphur are burned and when gas is processed or metals are extracted from ore. Like other sulphur oxide gases, SO2 dissolves in water or water vapour to form acid, and interacts with other gases and particles in the air to form sulphates and other products.

Sulphur dioxide is a colourless gas that is about 2.5 heavier than air. It has a sweet pungent odour, and can be detected by taste and smell at concentrations as low as 300 parts per billion (ppb). Acids that are formed when SO2 (and nitrogen oxides) react with other substances in the air may be carried great distances before falling to earth as rain, fog, snow or dry particles. Acid rain damages forests and crops, changes the chemical make-up of soils, and increases the acidity of lakes and streams. Continued long-term exposure will affect the natural variety of plants and animals in an ecosystem. As well as contributing to smog, SO2 emissions cause aesthetic damage and accelerate the decay of building materials and paints.

General guidelines dictate evacuation where SO2 concentrations reach 5 ppm averaged over a 15 minute period. However, as a precaution, evacuation will be established under the criteria when the SO2 level reaches 1 ppm for two to three hours, or averages 0.3 ppm over twenty-four hours.

Signs and Symptoms

Sulphur dioxide causes a wide variety of health and environmental impacts because of the way it reacts with other substances in the air. Acute and chronic exposure to SO2 affects the respiratory system. Acute exposure effects, with increasing exposure, include irritation of the eye, nose and throat, choking, coughing, bronchitis and pneumonia. Exposure to low concentrations can aggravate chronic pulmonary diseases, such as asthma and emphysema. Co-exposure to cold or dry air may further exacerbate the respiratory effects of SO2 on sensitive asthmatics. Particularly sensitive groups include children, the elderly and those with existing heart or lung disease.

Sulphur Dioxide Toxicity Table (BC Regulations)

Concentration (ppm)	Effects
0.13	24 hour level (MWLAP Level B Criteria).
0.34	One hour average evacuation level (MWLAP Level B criteria).
2	Eight hour occupational Exposure Limit (BC WCB)
3 – 5	Odour threshold.
5	15 minute Occupational Exposure Limit (BC WCB)
8 – 12	Throat irritation, coughing, constriction in chest, tearing and smarting of the eyes.
10 – 50	5 – 15 minutes exposure produces increased irritation of eyes, nose, and throat, choking, coughing, and in some cases wheezing due to narrowing of the airways (which increases the resistance of the air flow).
150	Short-term endurance lost due to the severe eye irritation and because of the effects on the membranes of the nose, throat, and lungs.
500	Highly dangerous after exposure of 30 – 60 minutes.

Adapted from the Canada Safety Council Data Sheet "Sulphur Dioxide" No. B-4 Oil and Gas Commission November 2003.

Appendix C: Toxic Gases, continued

Acute Health Effects of Sulphur Dioxide (AB Regulations)

Concentration (ppm)	Acute Health Effects
0.1	Transient bronchoconstriction[1] in sensitive exercising asthmatic individuals that ceases when exposure ceases. [2]
0.3 – 1	Possible detection by taste or smell.
0.75	Transient lung function changes in healthy, moderately exercising, non-asthmatic individuals.
1 - 2	Lung function changes in healthy non-asthmatics. Symptoms in asthmatics would likely increase in severity. There may be a shift to clinical symptoms from changes detectable only via spirometry.
3	Easily detected odour.
6 – 12	May cause nasal and throat irritation.
10	Upper respiratory irritation, some nosebleeds.
20	Definitely irritating to the eyes; chronic respiratory symptoms develop; respiratory protection is necessary.
50 – 100	Maximum tolerable exposures for 30-60 minutes.
Greater than 100	Immediate danger to life (NIOSH recommendation).

[1] At low levels, bronchoconstriction was generally observed as changes in airway conductance detectable by spirometry rather than as clinical symptoms.

[2] It should be noted that clinical studies on humans are generally designed to elicit a response and consequently subject study volunteers to challenging conditions such as exercising, mouth breathing, cold, dry air, etc. Real-life responses in asthmatics should be viewed as being individual-specific dependent on severity of asthma, whether the individuals are medicated or not, how cold and/or dry the air is, mouth breathing (vs. nose breathing, which can act as an effective scrubber mechanism) and exercise.

Adapted from: Technical Advisory Committee on Public Health and the Oil and Gas Industry, Environmental Public Health Manual for Oil and Gas Activities in Alberta, 2007

Source: Alberta Health Services, Environmental Public Health
http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf

Appendix C: Toxic Gases, continued

Medical treatment for sulphur dioxide exposure

(Please note: This information was provided by a medical source other than the Provincial Regional Health Authorities. See Sulphur Dioxide (SO$_2$) Guidelines - Revised July 2001)

Guidelines for in Hospital Assessment/Treatment of Possible Sulphur Dioxide Exposure

This is provided to assist medical staff in assessing a worker who has a possible or actual SO$_2$ exposure.

Section I provides information on SO$_2$

Section II summarizes possible health effects which should be evaluated at the time of presentation

Section III depicts a summary of possible clinical management

Section IV provides a guideline regarding return to work (RTW) considerations.

I. Sulphur Dioxide

SO$_2$ is a colourless gas with a pungent odour detectable by the human nose at concentrations of about 0.5 to 0.8 ppm.

SO$_2$ is highly soluble in water resulting in the formation of sulphurous acid.

Approximately 90% of inhaled SO$_2$ is absorbed in the upper respiratory tract.

Asthmatics and individuals with underlying bronchial hyperactivity may be more susceptible to low level exposure to SO$_2$.

II. Health Effects of Sulphur Dioxide

SO$_2$ causes almost immediate coughing with significant exposure.

SO$_2$ causes irritation of the conjunctive and nasal mucosa at levels between 5 and 10 ppm.

Exposures of SO$_2$ as low as 8 ppm has been associated with symptoms of cough, phlegm, wheezing and exertional dyspnea.

Acute high-dose exposures leading to severe injury are unusual, parenchyma lung damage occurs above 50 ppm.

Appendix C: Toxic Gases, continued

Medical treatment for sulphur dioxide exposure, continued

Acute exposure may include the following symptoms and signs:

Respiratory

Inhaled SO_2 is a moderate to strong respiratory irritant. Reddening of the throat and nose may occur. Repeated exposure to 10 ppm has caused nosebleeds. Sensitivity varies among people, short exposure to low concentrations may produce a reversible decrease in lung function, and symptoms may include chest tightness.

Exposure to high concentrations of SO_2 has caused severe airways obstruction, hypoxia and pulmonary edema. The effects of pulmonary edema include coughing and shortness of breath which can be delayed until hours or days after the exposure; these symptoms are aggravated by physical exertion. Survivors of high concentration exposures may suffer chemical bronchopneumonia and bronchiolitis obliterans, which can be fatal after a few days. Delayed chemical pneumonitis and bronchial asthma can also result.

Dermal

The gas will react with moisture on the skin and cause irritation (redness, itching).

Ocular

Eye irritation may result in smarting of the eyes and tearing. In severe cases (high concentrations in a confined area), SO_2 has caused temporary corneal burns.

Potential Sequelae

Survivors of high concentration exposures may suffer chemical bronchopneumonia and bronchiolitis obliterans, which can be fatal after a few days. Delayed chemical pneumonitis and bronchial asthma can also result.

III. Approach to the worker with suspected Sulphur Dioxide Exposure

Although this document refers only to SO_2, it is important for the clinician to keep in mind the possibility of co-exposure to numerous other agents.

History

The history is the key to the diagnosis of SO_2 (or other industrial) intoxication. There are two facets to the history in such cases:

Exposure history: This attempts to define, in qualitative terms, the likelihood of, and amount of exposure to sulphur dioxide. This should include questions about work processes, the presence of an odour and inquiring as to the effects in co-workers. If possible, this should be supplemented by industrial hygiene information which might include the triggering of alarms for sulphur dioxide and historical data on air measurements. For suspected exposures, the workplace can often provide useful estimates regarding the level of exposure, although such data may require several days to reconstruct.

Clinical history: The physician should attempt to establish the presence of as many of the symptoms as possible associated with SO_2 exposure.

Investigations

There are no specific tests in routine clinical use to establish sulphur dioxide intoxication. Rather, testing is aimed at characterizing the sequels of intoxication as well as to rule out other causes for the presentation.

Appendix C: Toxic Gases, continued

Medical treatment for sulphur dioxide exposure, continued

Treatment

Treatment is entirely supportive in nature and includes supplemental oxygen, managing eye and skin exposure as a chemical burn and maintenance of respiratory status.

On arrival - check blood gases. Take chest film and repeat as necessary keeping in mind the delayed possibility of pulmonary edema.

Oxygen should be delivered by nasal cannula or mask, or if pulmonary injury leads to severe hypoxia by mechanical ventilation.

If bronchospasm occurs, bronchodilators may be of value.

A pulmonary function test should be done near time of discharge and, if abnormal, should be repeated at appropriate intervals thereafter.

Conjunctival irritation should be treated with copious irrigation with saline and the eyes examined with fluorescein for corneal defects.

Assess for associated musculo-skeletal and internal traumatic injury.

Prophylactic antibiotics should be avoided.

If symptoms and/or exposure history are strongly clinically suggestive, because of the possibility of delayed pulmonary edema, adequate monitoring and follow-up for at least 24 hours is essential.

IV. Guidelines for Return to Work (RTW)

Three possible scenarios may be considered by the attending medical personnel:

Possible exposure, without symptoms;

Possible exposure, with symptoms (that are compatible with SO_2) or
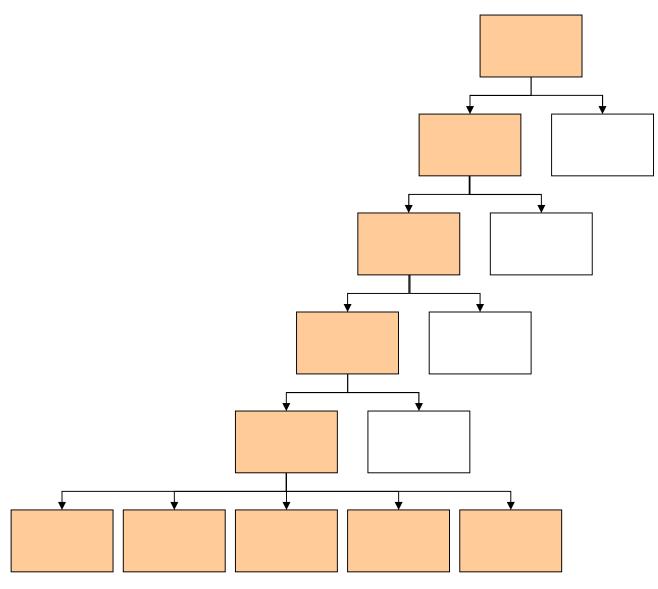
Known exposure, including "knockdown", with symptoms that require medical treatment and/or hospitalization.

In each scenario, a clinical decision about appropriate medical investigations, treatment, follow-up evaluation and timing of return-to-work (RTW) will have to be made. It is emphasized that with scenarios (2) and (3), it may be preferable to either monitor the employee in the hospital or as an outpatient (with follow-up examination) for 24 - 48 hours prior to RTW.

Appendix D: Key Elements of the Incident Command System (ICS)
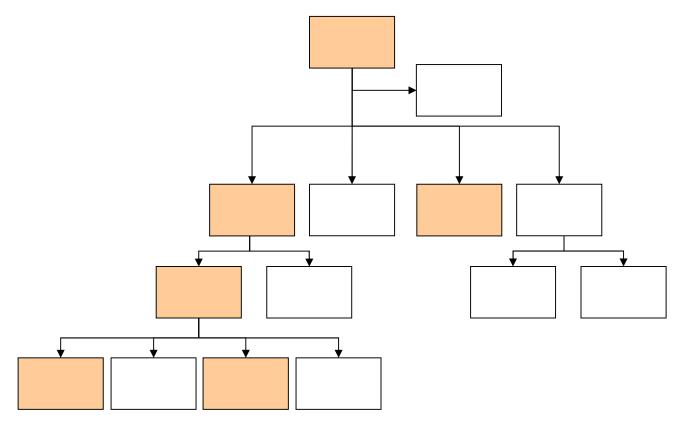
Management by Objectives – Objectives are ranked by priority, should be as specific as possible, must be attainable and if possible given a working time-frame. Objectives are accomplished by first outlining strategies (general plans of action), then determining appropriate tactics (how the strategy will be executed) for the chosen strategy

Unity and Chain of Command – Each individual takes direction from and reports to only one designated supervisor; this is called Unity of Command. Higher level personnel have authority over lower level personnel; the lower level personnel are subordinate to and take direction from higher level personnel. Orders and instructions travel down the chain of command from one supervisor to each subordinate. This is called Chain of Command.

Appendix D: Key Elements of the Incident Command System (ICS), continued

Organizational Flexibility – Only positions that are required at the time should be assigned. In most cases, very few positions will need to be assigned.

Span of Control – ICS requires that any single person's span of control (number of people reporting to them) should be between three and seven, with five being ideal.

Common Terminology – When different organizations are required to work together, the use of common terminology is essential.

Incident Action Plan (IAP) – Every incident must have a written or oral Incident Action Plan. The following information is part of an Incident Action Plan and must be communicated to the rest of the organization:

- Objectives, strategies and tactics outlined by the Incident Commander.
- Resources assignments – what resources do we have and what are they doing? What resources are on order and what are they going to do?
- A description of the ICS organizational structure – what positions will be filled?
- Supporting materials – incident map, communications plan, evacuation plan, stick diagrams, etc.

Integrated Communications – The use of a common communications plan is essential for ensuring effective communication during an incident.

Appendix D: Key Elements of the Incident Command System (ICS), continued

Establishment and Transfer of Command – The highest ranking authority arriving on-scene at an incident will assume the role of the Incident Commander. That person will continue to be the Incident Commander until there is a formal transfer of command. A transfer of command briefing usually consists of:

- Reviewing a description of the incident.
- Reviewing the actions taken thus far to contain and control the incident.
- Reviewing the current ICS organizational structure.
- A summary of the resources available and ordered.

Resources Management – A resource must either be in assigned, available, or out-of-service status.

- Assigned – a resource in assigned status is currently doing whatever tasks have been assigned to it.
- Available – a resource in available status is ready to be deployed at a moments notice. Resources in available status often wait for assignments at an incident Staging Area.
- Out-of-Service – a resources in out-of-service status might be sleeping, receiving medical aid, getting repairs, etc. and is not ready for assignment.

Summary of Responsibilities

These management functions are handled by the General Staff once they have been delegated by the Incident Commander.

Command   Ensures safety. Assumes overall responsibility for the incident.

The Incident Commander is responsible for the Command of the incident as well as the following management functions until they are assigned to other response personnel:

Operations   Implements the Incident Action Plan (IAP) focusing on control, containment, and site safety.

Public Safety   Implements the Incident Action Plan (IAP) focusing on notification and evacuation of the public.

Planning   Help create and track (document) the success of the Incident Action Plan (IAP).

Logistics   Secure the resources and put them in place to allow Operations to implement the Incident Action Plan.

Finance/Admin   Ensures procedures are in place to allow logistics to secure the resources (spending) and track and control the expenditures.

Communications   Disseminates information and liaises with external agencies.

Communications is handled by the Information Officer once one has been appointed by the Incident Commander. The Information Officer is part of the Command Staff.

Appendix E: Land Descriptions

Dominion Land Survey (DLS) System

- Each township (6 mile x 6 mile) is divided into 36 sections (1 mile x 1 mile)
- Each section is divided into 16 legal sub-divisions (L.S.D.)
- Each section is divided into four quarters (N.W., N.E., S.W., and S.E.)

The numbering of sections and L.S.D.s is shown below:

- Townships increase in number from South to North starting at the Canada - USA border
- Ranges increase in number from East to West within a Meridian. A Range is one (1) Township wide (6 miles).
- Meridians run from the North Pole to the South Pole and are spaced every four degrees. The principal Meridian in Canada originates in Central Manitoba and increases West or East from there.
- Legal land description is listed in the following order:

	L.S.D		Section		Township		Range		Meridian
Example	02	-	01	-	38	-	09		West of the 4th

Appendix E: Land Descriptions, continued

National Topographic System (NTS)

Based on the National Topographic System (NTS), the map labelling terms are as follows:

1) Series	A rectangular area that has a width of 8 degrees of longitude and 4 degrees of latitude. There are 9 Series in British Columbia (82, 83, 92, 93, 94, 102, 103, 104, and 114).
2) Area	1/16 of a map Series that has a width of 2 degrees of longitude by 1 degree of latitude (labelled from A to P).
3) Sheet	1/16 of map Area that has a width of 30' in longitude and 15' of latitude (labelled from 1 to 16).
4) Block	1/12 of a map Sheet with a width of 7'30" in longitude and 5' in latitude (labelled from A to L).
5) Unit	1/100 of a map Block, and has a latitudinal extent of 30" and longitudinal extent of 45" (labelled from 1 to 100).
6) Quarter Unit	1/4 of a map Unit (labelled from a to d).

Note: 1 degree is equivalent to approximately 111 km in British Columbia. Degrees vary in size around the planet. They become smaller the closer they get to the poles (north or south) and very large as they reach the equator.

Example   a-29-H / 93-P-9

Series

93	

Areas

M	N	O	P
L	K	J	I
E	F	G	H
D	C	B	A

Sheets

13	14	15	16
12	11	10	9
5	6	7	8
4	3	2	1

Blocks

L	K	J	I
E	F	G	H
D	C	B	A

Units

100	99	98	97	96	95	94	93	92	91
90	89	88	87	86	85	84	83	82	81
80	79	78	77	76	75	74	73	72	71
70	69	68	67	66	65	64	63	62	61
60	59	58	57	56	55	54	53	52	51
50	49	48	47	46	45	44	43	42	41
40	39	38	37	36	35	34	33	32	31
30	29	28	27	26	25	24	23	22	21
20	19	18	17	16	15	14	13	12	11
10	09	08	07	06	05	04	03	02	01

Quarter Units

c	d
b	a

a	-	29	-	H	/	93	-	P	-	9
Quarter Unit		Unit		Block		Series		Area		Sheet

Appendix F: ERP Reference Material

Acronyms

Acronym	Meaning	Acronym	Meaning
ABSA	Alberta Boilers Safety Association	ICS	Incident Command System
AEMA	Alberta Emergency Management Agency	IIZ	Initial Isolation Zone
AER	Alberta Energy Regulator	INAC	Indigenous and Northern Affairs Canada
AH	Alberta Health	LA	Local Authority
AHS	Alberta Health Services	LBV	Line Block Valve
AT	Alberta Transportation	LEL	Lower Explosive Limit
BLEVE	Boiling Liquid Expanding Vapour Explosion	LPG	Liquefied Petroleum Gas
CANUTEC	Canadian Transport Emergency Centre	MARS	Mapping and Response System
CAPP	Canadian Association of Petroleum Producers	MD	Municipal District
CEPA	Canadian Environmental Protection Act	MEP	Municipal Emergency Plan
CER	Canada Energy Regulator	MOP	Maximum Operating Pressure
CERC	Corporate Emergency Response Centre	NGL	Natural Gas Liquids
CISD	Critical Incident Stress Debriefing	NOTAM	Notice to Airmen
CPE	Communications and Public Engagement	OGC	Oil & Gas Commission
CSA	Canadian Standards Association	OHS	Occupational Health and Safety
DFO	Department of Fisheries and Oceans	OSCAR	Oil Spill Containment and Recovery
EAZ	Emergency Awareness Zone	OSCP	On-Site Command Post
ECCC	Environment & Climate Change Canada	PAD	Protective Action Distance
EMBC	Emergency Management BC	PAZ	Protective Action Zone
EMO	Emergency Measures Organization	POC	Provincial Operations Centre
EOC	Emergency Operations Centre	PPB	Parts Per Billion
EPZ	Emergency Planning Zone	PPE	Personal Protective Equipment
ER	Ministry of Energy and Resources	PPM	Parts Per Million
ERAC	Emergency Response Assistance Canada	RCMP	Royal Canadian Mounted Police
ERP	Emergency Response Plan	RD	Rural District
ESD	Emergency Shut Down	REOC	Regional Emergency Operations Centre
ESDV	Emergency Shut-Down Valve	RHA	Regional Health Authority
ETA	Estimated Time of Arrival	RM	Rural Municipality
FH Order	Fire Hazard Order	SABA	Supplied Air Breathing Apparatus
FNIHB	First Nations and Inuit Health Branch – Health Canada	SCBA	Self-Contained Breathing Apparatus
GEOC	Government Emergency Operations Centre	SDS	Safety Data Sheet
HPZ	Hazard Planning Zone	SHA	Saskatchewan Health Authority
HVAC	Heating Ventilation Air Conditioning	SO_2	Sulphur Dioxide
HVP	High Vapour Pressure	STARS	Shock Trauma Air Rescue Society
HVPL	High Vapour Pressure Liquid	TDG	Transportation of Dangerous Goods
H_2S	Hydrogen Sulphide	WCSS	Western Canadian Spill Service
IAP	Incident Action Plan	WHMIS	Workplace Hazardous Materials Information System

Appendix F: ERP Reference Material, continued

Glossary of Terms

Adjacent to
Within 25 m.

Air Quality Monitoring
Measurement of atmospheric concentrations of a hazardous substance, such as H_2S or SO_2.

Alberta Energy Regulator (AER)
The AER ensures the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for Albertans.

Alert (Alberta specific)
An incident that can be handled on-site by the licensee through normal operating procedures and is deemed to be a very low risk to members of the public.

Auto-ignition temperature
All NGL products are flammable and will flash at extremely low temperatures. An open flame or spark is not necessary to cause ignition. Any hot surface which exceeds the auto-ignition temperature of a product can cause a fire if the vapours reaching the hot surface are within their flammable range.

Best practices
A technique or methodology that, through experience and research, has proven to reliably lead to a desired result. A commitment to using the best practices in any field is a commitment to using all the knowledge and technology at one's disposal to ensure success.

Body of water
Streams, lakes, and rivers.

Boiling Liquid Expanding Vapour Explosion (BLEVE)
Boiling Liquid Expanding Vapour Explosion, which is associated with natural gas liquids and high vapour pressure liquids.

Boiling point
This is the temperature that a liquid changes to a gas. NGL products change to a gas at extremely low temperatures and will absorb heat from the surrounding environment during the phase change. Therefore, caution must be used when working with NGLs because contact with flesh can reduce the temperature of the flesh to the NGL boiling point and cause severe frostbite.

British Columbia Oil and Gas Commission (OGC)
The OGC is the lead agency for all regulated oil and gas related activities within British Columbia.

British Columbia Emergency Management (EMBC) *(British Columbia specific)*
Aids local governments in analyzing hazards and risks, develop and test emergency plans, train and organize emergency staff and volunteers. EMBC also manages all agencies in the event of an emergency or disaster, which cannot be handled locally.

Businesses
Industrial operators, retail outlet operators, suppliers, residents, outfitters, foresters and other entities that normally operate within the Emergency Planning Zone, but do not necessarily reside in the Emergency Planning Zone.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Closure order *(British Columbia specific)*
When the OGC believes that, because of hazardous conditions in a field or at a well, it is necessary or expedient to close an area and to shut out all persons except those specifically authorized, the commission may make an order in writing setting out and delimiting the closed area. For Alberta see Fire Hazard (FH) Order.

Corporate Emergency Response Plan
This Emergency Response Plan is to facilitate a co-ordinated response by company executive and management personnel to an emergency situation, which may affect the company or its affiliated companies. The Corporate Emergency Response Plan is an integral part of all site-specific company Emergency Response Plans and procedures.

Critical Incident Stress Debriefing (CISD)
Critical Incident Stress Debriefing is a specially structured counselling process between the debriefers and those who are directly involved and/or impacted by an incident.

Critical sour well *(Alberta specific)*
A well with an H_2S release rate greater than 2.0 m3/s or wells with lower H_2S release rates in close proximity to an urban centre as defined in ID 97-6: Sour Well Licensing and Drilling Requirements.

Emergency
A present or imminent event outside the scope of normal operations that requires prompt coordination of resources to protect the health, safety, and welfare of people and to limit damage to property and the environment.

Emergency Operations Centre (EOC)
An Emergency Operations Centre is a designated facility in a suitable location (i.e. head office, regional office, etc.) established by the permit holder to support Incident Command and to manage the larger aspects of an emergency. In a high-impact emergency, there may be a number of EOCs established to support the response. They may include the Incident Command Post, regional and corporate EOCs, a municipal EOC (MEOC), and the provincial government EOC (POC).

Emergency Awareness Zone (EAZ) (British Columbia specific)
A distance outside of the EPZ where public protection measures may be required due to poor dispersion of the hazard. This area is twice the radius of the Emergency Planning Zone (EPZ).

Emergency Planning Zone (EPZ)
The geographical area that surrounds a well, pipeline or facility containing hazardous product that requires specific emergency response planning by the licensee.

Emergency Response Plan (ERP)
A comprehensive plan to protect the public that includes criteria for assessing an emergency situation and procedures for mobilizing response personnel and agencies and establishing communication and coordination among the parties.

Emergency Support Team (EST)
Provides advice and logistical support to the Field Response Team and Incident Commander in particular. The team is comprised of head office personnel and any contract emergency experts.

EOC Director
The EOC Director activates the Corporate Emergency Operations Centre with staff to provide advice and support to the Incident Commander (Field Response Team).

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

EOC Director, continued
Note: If the emergency happens outside an area that has a site specific Emergency Response Plan, only then will the EOC Director assume or appoint the role of Incident Commander and dispatch a Field Response Team to the incident site.

ERCBH2S *(Alberta specific)*
A software program that calculate site-specific EPZs using thermodynamics, fluid dynamics, atmospheric dispersion modelling and toxicology.

Evacuation
Organized, phased, and supervised withdrawal of members of the public from dangerous or potentially dangerous areas to safe areas.

> **Tactical Evacuation** – A measure to immediately move people to a safe area as part of emergency response and operations. Does not require approval from local authority but the local authority may enact an evacuation order, if required, and local authority must be advised if a tactical evacuation has occurred.

> **Planned Evacuation** – An evacuation coordinated by local government authority that can authorize evacuation alerts and orders.

Explosive Limits (Lower and Upper)
Each gaseous hydrocarbon substance has a minimum (Lower Explosive Limit or LEL) and a maximum (Upper Explosive Limit or UEL) percentage in air below or above which combustion will not take place. Explosive limit and flammability limit are used interchangeable. The terms "Too Lean" and "Too Rich" are used for levels outside of the explosive range.

Facility
Any building, structure, installation, equipment, or appurtenance that is connected to or associated with the recovery, development, production, handling, processing, treatment, or disposal of hydrocarbon-based resources or any associated substance or wastes. This does not include wells or pipelines.

Field Response Team (FRT)
Company and contractor personnel directly involved in controlling the incident at the emergency site and from the EOC.

Fire Hazard (FH) Order *(Alberta specific)*
An order issued by the AER during an emergency to restrict public access to a specified area.

Functional Exercise
As described in CAN/CSA Z246.2-18, an activity designed to evaluate capabilities and multiple functions using simulated response. A functional exercise will simulate the deployment of resources and rapid problem solving. Participants will evaluate management of the command and coordination centres and assess the adequacy of emergency response plans and resources.

Gathering system
The network of pipelines, pumps, tanks, and other equipment that carries oil and gas to a processing plant or to other separation equipment.

Hazard
A situation with potential to harm persons, property, or the environment.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Hazard Planning Zone (HPZ) (British Columbia specific)
A geographical area (a) determined by using the hazard planning distance as a radius, and (b) within which persons, property or the environment may be affected by an emergency. Defined in Emergency Management Regulation.

Hazardous product
A substance released in quantities that may harm persons, property, or the environment.

High Vapour Pressure Liquids (HVPLs)
HVPLs have a vapour pressure greater than 240 kPa at 38°C (34.8 PSIG @ 100°F) and include ethane, propane, butane, and pentanes plus, either as a mixture or as a single component.
Note: Comparisons

      Gasoline -   Vapour pressure between 55 and 100 kPa at 38°C (8 - 14.5 PSIG @ 100°F).

      Condensate - Often a component of a propane/butane mixture, has a vapour   pressure of 59 to 72 kPa at 38°C (8.6 - 10.4 PSIG @ 100°F).

High Vapour Pressure (HVP) plume dispersion geometry
An uncontrolled release of NGL product on flat terrain will form a vapour plume as it disperses. If the vapour plume formed at the leak site has not been ignited, it will most likely reach its maximum size within the first half hour of the leak occurrence. Two unique features of an NGL plume are:
The downwind edge of the plume tends to spread out significantly forming a broad frontal edge.
Under certain conditions, the plume will travel upwind for a short distance.

High Vapour Pressure (HVP) pipeline
A pipeline system conveying hydrocarbons or hydrocarbon mixtures in the liquid or quasi-liquid state with a vapour pressure greater than 110 kilopascals absolute at 38°C. Some examples are liquid ethane, ethylene, propane, butanes, and pentanes plus.

High Vapour Pressure (HVP) products
HVP products have a vapour pressure greater than 240 kPa at 38°C (34.8 PSIG at 100°F) and include ethane, propane, butane and pentanes plus, either as a mixture or as a single component. A leak from a vessel or pipe containing HVP products can result in a BLEVE.

Hydrogen sulphide (H_2S)
A naturally occurring gas found in a variety of geological formations and also formed by the natural decomposition of organic matter in the absence of oxygen. H_2S is colourless, has a molecular weight that is heavier than air, and is extremely toxic. In small concentrations, it has a rotten egg smell and causes eye and throat irritations. Depending on the particular gaseous mixture, gas properties, and ambient conditions, a sour gas release may be:
Heavier than air (dense), so it will tend to drop towards the ground with time,
Lighter than air (buoyant), so it will tend to rise with time, or
About the same weight as air (neutrally buoyant), so it will tend to neither rise nor drop but with time disperse.

Hydrogen sulphide (H_2S) release rate
The rate that sour gas escapes into the atmosphere is often calculated for sour gas wells. It is usually defined in cubic metres per second (m^3/s). The size of the emergency planning zone is estimated from the H_2S release rate.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Hydrogen sulphide (H₂S) release volume
The volume of sour gas that escapes into the atmosphere is often calculated for facilities that have a defined retention volume, usually defined in cubic metres. Emergency planning zone sizes are often estimated using the volume of H_2S that may be released from a facility. More sophisticated models may also incorporate the rate at which the release could occur and the nature of the gas and the atmospheric conditions when determining the emergency planning zone size.

Hyper-susceptible
A person or persons who may be abnormally reactive to a given exposure to toxins and whose reaction may occur in orders of magnitude greater than that of the susceptible population. Hypersusceptibles include those persons with impaired respiratory function, heart disease, liver disease, neurological disorders, eye disorders, severe anemia, and suppressed immunological function.

Ignition
Process of setting a hydrocarbon release on fire.

Ignition Team
Consists of at least two personnel trained in plume ignition.

Incident
An unexpected occurrence or event that requires action by emergency personnel to prevent or minimize the impacts on people, property, and the environment.

Incident classification
A system that examines the risk level to members of the public following an incident and assigns a level of emergency based on the consequence of the incident and the likelihood of the incident escalating.

Incident Command Post (ICP)
A designated place where the Incident Commander and staff is located. The ICP should be located outside of the hazard area, but close to the incident. The ICP may be a vehicle, trailer, fixed facility or any location suitable to accommodate the function.

Incident Commander
Manages the overall response to emergency incidents. The Incident Commander is responsible for: developing objectives, strategies and tactics that guide the response; assigning personnel to fill necessary positions; ensuring the safety of all personnel; keeping internal and external stakeholders updated; coordinating with other response agencies.

Incident Command System (ICS)
A standardized, on-scene, all-hazard incident management system. The Incident Command System (ICS) is flexible in that it can be adapted for large and small incidents.

Initial Isolation Zone (IIZ)
An area in close proximity to a continuous hazardous release where indoor sheltering may provide limited protection due to proximity of release.

Incident Management System
A system used to coordinate preparedness and incident management.

Isolating the release
Ensuring access to the hazard area is controlled.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Level 1 Emergency *(Alberta specific)*
There is no danger outside the licensee's property, there is no threat to the public, and there is minimal environmental impact. The situation can be handled entirely by licensee personnel. There will be immediate control of the hazard. There is little or no media interest.

Level 1 Emergency *(British Columbia specific)*
There is no immediate danger to the public or environment as no H_2S has been released; the emergency is confined to the lease or company property.

Level 2 Emergency *(Alberta specific)*
There is no immediate danger outside the licensee's property or the right-of-way, but there is the potential for the emergency to extend beyond the licensee's property. Outside agencies must be notified. Imminent control of the hazard is probable but there is a moderate threat to the public and/or the environment. There may be local and regional media interest in the event.

Level 2 Emergency *(British Columbia specific)*
There is potential risk to the public or environment, as the emergency could extend beyond company property. However, control is still possible.

Level 3 Emergency *(Alberta specific)*
The safety of the public is in jeopardy from a major uncontrolled hazard. There are likely significant and ongoing environmental impacts. Immediate multi agency municipal and provincial government involvement is required.

Level 3 Emergency *(British Columbia specific)*
An immediate danger to the public or environment exists; control of the situation has been lost.

Licensee
The responsible duty holder as specified in legislation.

Liquid to gas expansion
NGL products will expand greatly when released to the atmosphere. For example, propane expands 272 times its liquid volume. Other products expand at different rates, but all have a high gas to liquid ratio.

Liquefied Petroleum Gas (LPG)
Mixture of heavier, gaseous hydrocarbons (butane and propane), liquefied as a portable source of energy.

Local Authority
A local authority is considered to be:
  1) The council of a city, town, village or municipal district;
  2) in the case of an improvement district or special area, the Minister of Municipal Affairs;
  3) for a national park, the park superintendent or the par superintendent's delegate;
  4) the settlement council of a Métis settlement; or
  5) the band council of a First Nations Reserve.

Local State of Emergency
See State of local emergency.

Lower Explosive Limit (LEL)
The lowest concentration of gas or vapour (per cent by volume in air) that explodes if an ignition source is present at ambient temperatures.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Manitoba Growth, Enterprise & Trade – Petroleum Branch
The Manitoba Growth, Enterprise & Trade – Petroleum Branch administers The Mines and Minerals Act and related regulations governing the exploration, development, production, transportation and storage of crude oil and natural gas.

M.D.
Municipal District

Major (full-blown) exercise
As described in CAN/CSA Z246.2-18, a multi-agency, multi-jurisdictional activity involving actual deployment of resources in a coordinated response, as if a real emergency had occurred. The full-scale exercise includes the mobilization of units, personnel, and equipment. Participants will assess plans and procedures and evaluate coordinated responses under crisis conditions.

Maximum Operating Pressure (MOP)
The maximum licensed operating pressure for a vessel or pipeline or a section of it.

Ministry of Energy and Resources (ER)
MER is the lead regulatory agency for the upstream petroleum industry in Saskatchewan.

Mobile air quality monitoring
Use of sophisticated portable equipment to track substances such as H_2S or SO_2 at very low parts per billion atmospheric concentrations.

Municipality
See local authority.

Municipal Emergency Operations Centre (MEOC)
The centre from which responsible municipal officials manage and support emergency operations within their jurisdiction, as well as formulate protective actions and provide public information. The centre has adequate workspace, maps, status boards, and communications capability.

Municipal Emergency Plan (MEP)
The emergency plan of the local authority.

Natural Gas Liquids (NGL)
These are hydrocarbons liquefied under pressure in field facilities or in gas processing plants. Natural gas liquids include ethane, propane, butane and pentanes plus and normally occur as a mixture of these compounds.
Physical Properties of NGL Products:

Colour - NGL products are colourless except when they include a condensate component, which gives them a light-yellow appearance. Releases during winter conditions can discolour snow. NGL products may appear as a white cloud when released to the atmosphere. This white cloud is formed by the condensing of moisture in the air.

Odour - Most NGL products have a mild petroleum odour. During pipeline transport NGL products are almost odourless.

Vapour Density - A measure of the mass per unit volume of the vapour (i.e. kg/m3). All NGL products transported by the company have a vapour density greater than air or a relative vapour density greater than 1.0.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

NAV Canada
Canada's civil air navigation services provider, with operations coast to coast. NAV Canada provides air traffic control, flight information, weather briefings, aeronautical information services, airport advisory services, and electronic aids to navigation.

Notice to Airmen (NOTAM)
An order issued by Transport Canada restricting access to airspace in a defined area.

Notification
The distribution of project-specific information to participants that may be directly and adversely affected by the proposed energy development.

Odour complaint
A report that someone smells an offensive odour (may be sour gas) in the area.

Oil Spill Containment and Recovery Unit (OSCAR)
Trailer containing oil spill equipment for containment and recovery.

On-site command post (OSCP)
An emergency operations centre established in the immediate vicinity of the incident to provide immediate and direct response to the emergency and initially staffed by licensee personnel.

Partially controlled flow
A restricted flow of product at surface that cannot be shut off at the licensee's discretion with equipment on-site.

Personal consultation
Consultation through face-to-face visits or telephone conversations with all requisite individuals.

Petroleum industry
Refers to all petroleum industry operations.

Plume (gas plume)
An elongated mobile column of gas or smoke.

Protective Action Zone (PAZ)
An area downwind of a hazardous release where outdoor pollutant concentrations may result in life threatening or serious and possibly irreversible health effects on the public.

Protective Action Distance (PAD)
The distance from the incident to the EPZ outer boundary.

Provincial Operations Centre (POC)
An operations centre with the capacity to accommodate representatives from each government department.

Public
The group of people who may be or are impacted by an emergency (e.g., employees, contractors, neighbours, emergency response organizations, regulatory agencies, the media, appointed or elected officials, visitors, customers, etc., as appropriate).

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Public facility *(Alberta specific)*
A public building, such as a hospital, rural school, or major recreational facility, situated outside of an urban centre that can accommodate more than 50 individuals and/or that requires additional transportation to be provided during an evacuation.

Public protection measures
The use of sheltering, evacuation, ignition, and isolation procedures to mitigate the impact of a hazardous release on members of the public.

Public Safety Group Supervisor
Member of the field response team. Individual charged with the responsibility of co-ordinating the evacuation or shelter of people in the emergency hazard Area. The Public Safety Group Supervisor reports to and may be located in the same location as the Incident Commander.

Publicly used development *(Alberta specific)*
Places where the presence of 50 individuals or less can be anticipated (e.g., places of business, cottages, campgrounds, churches, and other locations created for use by the non-resident public).

Publicly used facility (British Columbia specific)
Places where the presence of people can be anticipated. Examples include places of business, cottages, campgrounds, churches, and other locations created for use by the public. Includes any similar development the OGC may designate as a public facility.

Publicly used facility
Places where the presence of people can be anticipated. Examples include places of business, cottages, campground, churches, and other locations created for use by the public.

Reception centre
A centre established to register evacuees for emergency shelter, to assess their needs, and, if temporary shelter is not required because evacuees will stay elsewhere, to ascertain where they can be contacted.

Regional Emergency Operations Centre (REOC)
An operations centre established in a suitable location to manage the larger aspects of the emergency that is manned jointly by government and industry staff.

Residence
A dwelling that is occupied full time or part time.

Resident
Individual living in the area at a fixed location.

Resident data record
Form used to track the contact made with residents, businesses and transients.

Response zones (Alberta specific)
The Initial Isolation Zone (IIZ), Protective Action Zone (PAZ) and Emergency Planning Zone (EPZ).

Roadblock Crew
Personnel responsible for controlling access to the Emergency Hazard Area, reporting to the Public Safety Group Supervisor.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Rover
Member of the field response team. Individual responsible for assisting in the evacuation of the Hazard Area, reporting to the Public Safety Group Supervisor. May also be directed to shut-in / shut down equipment that may cause future safety hazards.

Rover Kit
A briefcase containing maps, forms, supplies and instructions needed by the Rover to carry out their duties.

S.A.B.A.
Supplied Air Breathing Apparatus.

S.C.B.A.
Self Contained Breathing Apparatus.

Serious injury
A serious injury includes the following:
- an injury that results in death;
- fracture of a major bone;
- amputation other than a portion of a finger or toe;
- loss of sight in an eye;
- internal haemorrhage;
- third degree burns;
- unconsciousness;
- An injury that results in paralysis (permanent loss of function).

Shelter-in-Place
Remaining indoors for short-term protection from exposure to toxic gas releases.

Sour gas
Natural gas, including solution gas, containing hydrogen sulphide (H_2S).

Sour gas release
An uncontrolled release of natural gas containing hydrogen sulphide (H_2S).

Sour multiphase product *(British Columbia specific)*
Any liquid that contains H_2S in the gas phase.

Sour multiphase pipeline *(British Columbia specific)*
A pipeline that transmits a multiphase product that contains more than 10 moles of H_2S per kilomole of natural gas in the gas phase.

Sour pipeline
Pipeline that conveys gas and/or liquid that contains sour gas.

Sour production facility
Facility that processes gas and/or liquid that contains sour gas

Sour well
An oil or gas well expected to encounter during drilling formations bearing sour gas or any oil or gas well capable of producing sour gas.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Special needs
Those persons for whom early response actions must be taken because they require evacuation assistance, requested early notification, do not have telephones, require transportation assistance, have a language or comprehension barrier, or have specific medical needs. Special needs also include those who decline to give information during the public consultation process and any residences or businesses where contact cannot be made.

Special sour well *(British Columbia specific)*
A designation that reflects the proposed well's proximity to populated centers and its maximum potential H_2S release rate during the drilling state. The casing or open-hole flow configuration is used in arriving at this designation.

Standing well
A well that has been drilled and cased but not perforated. A company is generally allowed to leave the well as standing for up to one year.

State of local emergency
A declaration by a local authority providing the necessary authority, resources, and procedures at the municipal level to allow an emergency to be resolved effectively and efficiently.

Sulphur dioxide (SO$_2$)
A colourless, water-soluble, suffocating gas formed by burning sulphur in air; also used in the manufacture of sulphuric acid. SO_2 has a pungent smell similar to a burning match. SO_2 is extremely toxic at higher concentrations. The molecular weight of SO_2 is heavier than air; however, typical releases are related to combustion, which makes the gaseous mixture lighter than air (buoyant).

Surface development
Dwellings that are occupied full-time or part-time, publicly used development, public facilities, including campgrounds and places of business, and any other surface development where the public may gather on a regular basis. Surface development includes residences immediately adjacent to the EPZ and those from which dwellers are required to egress through the EPZ.

Susceptible
The subpopulation of persons who may be considered more sensitive to the effects of H_2S and SO_2, including the elderly, pregnant women, and the very young, particularly preschool-aged children.

Tabletop exercise
As described in CAN/ CSA Z246.2-18, an informal exercise generally used to review resource allocations and roles and responsibilities of personnel and to familiarize new personnel with emergency operations without the stress and time constraints of a major exercise.

Technically complete Emergency Response Plan (ERP)
A plan that meets all applicable requirements.

Telephoners
Telephoners place calls to residents as directed by the Public Safety Group Supervisor.

Threatening telephone call
Any communication that threatens the well-being of company personnel or property. A form is provided in the manual to capture data from or about a person who calls with a threatening message.

Transient
An individual that is temporarily in the area (e.g. camper, cross-country skier).

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Trapper
The holder of a provincial licensed and registered trapline for the purpose of hunting and trapping fur bearing animals.

Uncontrolled flow
A release of product that cannot be shut off at the licensee's discretion.

Urban centre
A city, town, village, summer village, or hamlet with no fewer than 50 separate buildings, each of which must be an occupied dwelling, or any similar development.

Unrestricted country development
Any collection of permanent dwellings situated outside of an urban centre and having more than eight permanent dwellings per quarter section.

Urban density development
Any incorporated urban centre, unincorporated rural subdivision, or group of subdivisions with no fewer than 50 separate buildings, each of which must be an occupied dwelling.

Vapour pressure
The pressure exerted by the vapour when the rate of evaporation is equal to the rate of condensation of the vapour. All NGL products have vapour pressure greater than atmospheric pressure air and therefore have to be kept under pressure or else they will vaporize.

Vapour-air plume / vapour cloud
When released to atmosphere, products form a vapour-air plume that is colourless, heavier than air and has a faint gasoline odour. Depending on the product released and the atmospheric conditions, water vapour may condense to form a cloud.

Water body
Natural or manmade; contains or conveys water continuously, intermittently, or seasonally. A natural water body is any location where water flows or is present, whether the flow or the presence of water is continuous, seasonal, intermittent, or occurs only during a flood. This includes, but is not limited to, the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh, slough, muskeg, or other natural drainage, such as ephemeral draws, wetlands, riparian areas, floodplains, fens, bogs, coulees, and rills. Examples of a manmade water body include, but are not limited to, a canal, drainage ditch, reservoir, dugout or other manmade surface feature.
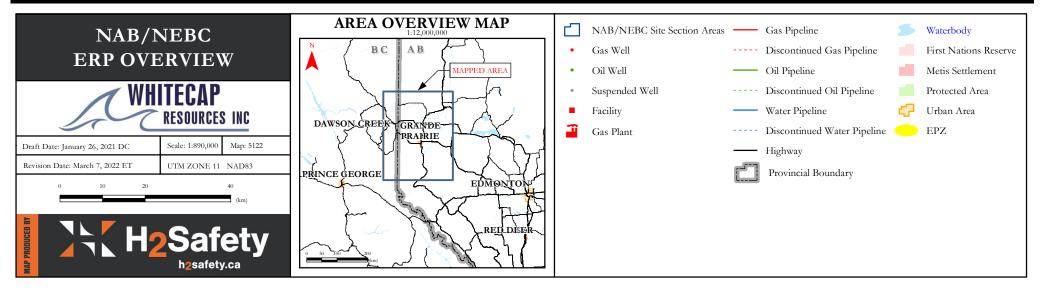
Well servicing
The maintenance procedures performed on a producing or injecting well after the well has been completed and operations have commenced. Well servicing activities are generally conducted to maintain or enhance well productivity or injectivity.

Workover
The process of re-entering an existing well to perform remedial action that will restore or improve the productivity or injectivity of the target formation.
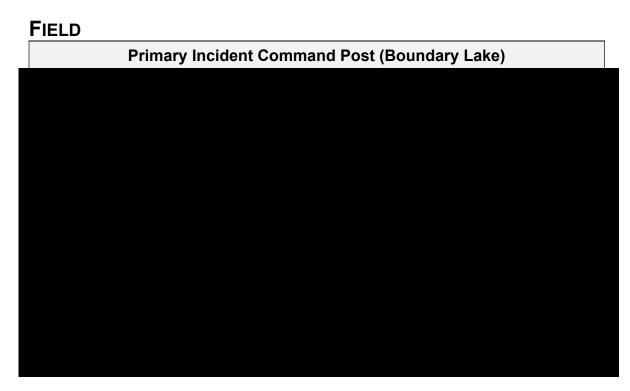
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NAB/NEBC
ERP OVERVIEW

WHITECAP RESOURCES INC

Draft Date: January 26, 2021 DC	Scale: 1:890,000 Map: 5122
Revision Date: March 7, 2022 ET	UTM ZONE 11 NAD83

0   10   20   40
(km)

MAP PRODUCED BY

H2Safety
h2safety.ca

AREA OVERVIEW MAP
1:12,000,000

N

B C   A B

MAPPED AREA

DAWSON CREEK   GRANDE PRAIRIE

PRINCE GEORGE

EDMONTON

RED DEER

50   100   200 (km)

▭ NAB/NEBC Site Section Areas	── Gas Pipeline	～ Waterbody
• Gas Well	--- Discontinued Gas Pipeline	First Nations Reserve
• Oil Well	── Oil Pipeline	Metis Settlement
• Suspended Well	--- Discontinued Oil Pipeline	Protected Area
■ Facility	── Water Pipeline	▭ Urban Area
🏭 Gas Plant	--- Discontinued Water Pipeline	⬭ EPZ
	── Highway	
	▭ Provincial Boundary	

RESPONSE FACILITY LOCATIONS

AB/SK 24 Hour Emergency Phone Number: 1-866-590-5289
BC 24 Hour Emergency Phone Number: 1-250-787-3700

FIELD

Primary Incident Command Post (Boundary Lake)

CORPORATE

Primary Emergency Operations Centre (EOC)

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Boundary Lake
CER Regulated Pipelines

Emergency Contact Information

<table>
<tr><td colspan="3">For Emergencies involving inter-provincial pipelines, the Canada Energy Regulator is the primary management agency – they will be contacted by the Transportation Safety Board.

**A pipeline is CER-regulated due to the fact that it crosses a provincial or federal border. **</td></tr>
<tr><td colspan="3">**This must be your first call**</td></tr>
<tr><td rowspan="3">**Transportation Safety Board (TSB) – for pipeline incidents**</td><td>24 Hr Incident Line</td><td>819-997-7887</td></tr>
<tr><td>Facsimile</td><td>819-953-7876</td></tr>
<tr><td>Email</td><td>PipelineNotifications@tsb.gc.ca</td></tr>
<tr><td>**Canada Energy Regulator (CER) – all other emergencies**</td><td>Incident Line</td><td>403-299-2773</td></tr>
<tr><td colspan="3">Call the TSB 24 Hr Incident Line when an incident meets the Immediately Reportable Events (see page 2 for criteria) for all Canada Energy Regulator (CER) regulated pipelines and facilities.
Both the phone notification and the input of information into the
CER's Online Event Reporting System (OERS): https://apps.cer-rec.gc.ca/ers/home/index
are required to occur as soon as possible and no later than three hours of the incident being discovered.
For all other events (non-immediate) companies are only required to input the information via the OERS.</td></tr>
<tr><td colspan="3">**Secondary Calls**
Contact as needed **AFTER** contacting the TSB and CER.</td></tr>
<tr><td>**Alberta Energy Regulator (AER)**</td><td>24 Hr</td><td>800-222-6514</td></tr>
<tr><td>**Emergency Management BC (EMBC)**</td><td>24 Hr</td><td>800-663-3456</td></tr>
<tr><td colspan="3">Hazardous occurrences (under Part XVI of the Canada Oil and Gas Occupational Safety and Health Regulations) and incidents requiring medical evacuations are to be reported to the CER immediately.</td></tr>
<tr><td colspan="3">Canada Energy Regulator   Régie de l'énergie du Canada</td></tr>
</table>

Definition of an Emergency

CAN /CSA Z246.2-18 defines an emergency as "an event or imminent event, outside of the scope of normal operations that requires prompt coordination of resources to protect people, the environment, and property".

Emergencies can result from numerous causes including pipeline and equipment failure, human error and natural perils such as tornadoes, hurricanes, floods, or earthquakes and terrorism or other criminal activities. Multi-hazard emergencies such as an earthquake causing pipeline breaks, fires and explosions, which result in injury and further property damage, can also occur.

Companies must consider all probable emergencies and have applicable procedures in place to deal with potential effects and threats to people, property and the environment, as determined through a formal hazard assessment.

CER Immediately Reportable Events (Significant Incident)

Section 52 of the Onshore Pipeline Regulations (OPR) requires companies to notify the CER of all incidents relating to the construction, operation, or abandonment of their pipelines.

A significant incident is an acute event that results in:

1. death;
2. missing person (as reportable pursuant to the *Canada Oil and Gas Drilling and Production Regulations (DPR)* under the *Canada Oil and Gas Operations Act (COGOA)* or the *Oil and Gas Operations Act (OGOA))*;
3. a serious injury (as defined in the OPR or TSB regulations);
4. a fire or explosion that causes a pipeline or facility to be inoperative;
5. a LVP hydrocarbon release in excess of 1.5m3 that leaves company property or the right of way;
6. a rupture; or
7. a toxic plume as defined in CSA Z662.

   Note: A "rupture" is an instantaneous release that immediately impairs the operation of a pipeline segment such that the pressure of the segment cannot be maintained.

Companies are required to report a death or serious injury to a person only where the death or injury is a result of an occurrence that relates to the construction, operation, or abandonment of a "pipeline". Whether a death or injury is related to the construction, operation, or abandonment of a pipeline will depend on whether the person who was killed or injured was working at the time of the incident and/or whether the work was a cause or contributing factor to the incident. It is important to note that, unlike the Canada Labour Code (CLC), the OPR does not differentiate between different types of "persons". Therefore, companies must report all deaths or serious injuries to any person that occur relating to pipeline construction, operation, or abandonment regardless of whether or not that person was directly employed by the company.

The definition of "serious injury" in the OPR is not exhaustive and contains multiple injuries that qualify as serious, including "the fracture of a major bone". The CER uses the following definition of "major bone": skull, mandible, spine, scapula, pelvis, femur, humerus, fibula, tibia, radius, and ulna.

TSB Immediately Reportable Events

Call the TSB as soon as possible after discovery of any of the following occurrences:

- An occurrence that results in;
  - a death;
  - a serious injury (as defined in the OPR or TSB regulations);
  - an unintended or uncontrolled LVP hydrocarbon release in excess of 1.5 m^3 that leaves company property or occurs on or off the right of way;
  - an unintended or uncontrolled sweet natural gas or HVP release >30,000 m^3;

- any unintended or uncontrolled release of sour natural gas or hydrogen sulfide;
  - a significant adverse effect on the environment (a release of any chemical or physical substance at a concentration or volume sufficient to cause an irreversible, long-term, or continuous change to the ambient environment in a manner that causes harm to human life, wildlife, or vegetation)
  - a fire, ignition, or explosion that poses a threat to the safety of any person, property, or the environment.
- A rupture:
  - an instantaneous release that immediately impacts the operation of a pipeline segment such that the pressure of the segment cannot be maintained.
- A Toxic Plume:
  - a band of service fluid or other contaminant (e.g. hydrogen sulfide or smoke) resulting from an incident that causes people, including employees, to take protective measures (e.g. muster, shelter-in-place or evacuation).

Where an event meets any of the above definitions, companies are required to notify the TSB Reporting Hotline at (819) 997-7887. Subsequently, the company is required to input the details required by both the TSB (see TSB regulations) and the CER into the OERS. The phone notification and the input of information into OERS are required to occur as soon as possible and no later than three hours of the incident being discovered. The goal of the initial phone notification is to allow the relevant agencies to mobilize a response to an incident, if required. Note that OERS will automatically determine whether the event meets the definition of an "Incident that Harms People or the Environment", however the company will be responsible for specifically indicating whether the incident meets the definitions of "Rupture" and "Toxic Plume".

For all other events that do not meet any of the definitions in this section, companies are not required to phone the TSB Reporting Hotline but must report the event as soon as possible and no later than twenty-four hours after the event was discovered.

Multiple Incident Types

It is possible that a single occurrence may result in multiple incident types. If multiple incident types occur as a result of a single occurrence, companies are expected to report those incident types under a single incident report.

Examples of situations where this might be the case include but are not limited to:

- A pipeline rupture (occurrence) where there is a release of gas (incident type) and an explosion (incident type);
- An industrial accident (occurrence) that causes a death (incident type), a serious injury (incident type) and a fire (incident type);
- An operational malfunction (occurrence) that causes an overpressure (incident type) and a release of product (incident type); or
- An operational malfunction (occurrence) that causes several concurrent or immediately consecutive overpressures (incident types).

In cases where an incident has occurred, and a second incident occurs during the response to the initial incident (e.g. a fire occurs during the clean-up of a spill), the second incident is considered distinct and should be reported separately.

The events that are reportable using the online reporting system are:

- incidents under the OPR, PPR, and DPR/*Oil and Gas Drilling Regulations;*
- emergency burning or flaring under the PPR;
- hazard identification under the PPR;
- suspension of operations under the PPR;
- near-misses under the DPR;

- serious accidents or incidents under the *Canada Oil and Gas Geophysical Operations Regulations/Oil and Gas Geophysical Operations Regulations;*
- emergencies or accidents under the *Canada Oil and Gas Installation Regulations/Oil* and *Gas Installation Regulations; and*
- accidents, illnesses, and incidents under the *Canada Oil and Gas Diving Regulations/Oil and Gas Diving Regulations.*

In the event that OERS is unavailable, companies are directed to report events to the TSB Reporting Hotline at 819-997-7887.

Reporting Timelines

Section 52 of the OPR requires companies to immediately notify the CER of any incident. Section 52 of the OPR also requires the submission of a Preliminary Incident Report (PIR) and a Detailed Incident Report (DIR) "as soon as is practicable". Generally, companies' initial notification of an incident will satisfy the PIR requirements. The information required for a DIR must be submitted within 12 weeks of reporting an incident. For complex incidents, companies may request an extension for submission of a DIR.

The CER and the TSB have adopted a single window reporting approach. However, in some areas, the TSB reporting requirements are somewhat different than the CER requirements. For additional details on the TSB reporting requirements, companies should refer to the TSB website (http://www.bst-tsb.gc.ca/eng/incidents-occurrence/index.asp).

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Transportation Safety Board of Canada
Place du centre, 4th Floor
200 Promenade du Portage
Hull, Quebec K1A 1K8
Facsimile 819-953-7876

</div>

Supporting Information

The table below indicates the location of CER supporting documentation in this emergency response plan.

Supporting Information	Found in
CER Distribution	Foreword: Distribution List Page 7
Company 24/7 Emergency Number	Area Specific Information: Binder Cover
Area Map of CER Regulated Facilities	Area Specific Information
TSB Roles & Responsibilities	Section 5: External Agencies Federal Roles Chart
CER Roles & Responsibilities	Section 5: External Agencies Federal Roles Chart
Safety data sheets (SDS)	Area Specific Information
Health and Safety Plan	Please refer to the company's Health & Safety Plan located at the corporate head office.

Emergency Preparedness & Response Policy

Emergency Management Expectations

An effective emergency management program includes being prepared for emergencies, responding in the event of an emergency and ensuring that operations are able to continue safely and can recover in a timely, efficient manner.

Emergency management is critical to ensuring that people, the environment, the public, the organization's assets and reputation are protected in the event of an unanticipated hazard event, be it natural, technological or human-induced.

Emergency Management Preparedness

Emergency preparedness is a continuous process of all-hazards planning and coordination in order to effectively minimize the adverse effects and consequences inherent in any emergency incident. Through the use of such tools as exercises, proactive resource management and capability analysis, preparedness is one of the key pillars with which to ensure the adaptation of comprehensive approaches for the company's emergency management strategy. The emergency management process must include the following:

- Hazard Risk and Vulnerability Assessment
- Public Involvement
- Communications Planning
- Situational Awareness
- Crisis Management Plans
- Emergency Response Plans
- Emergency Management Resources
- Competence, Training and Awareness
- Exercises and Drills
- Record Keeping
- Distributions Lists (Internal and External)
- Continuous Improvement

Emergency Response Plans should contain:

- Communication procedures
- Emergency contacts
- Evacuation and Rescue plans
- Equipment locations and supply companies
- Spill response and containment (where required)
- Meet regulatory requirements
- Event classification
- Activation and Stand Down Levels
- Guidelines for medical emergencies
- Defined roles and responsibilities
- Maps and Emergency Planning Zones
- Mutual Aid Understandings (where applicable)

Confidential ERPs will be available at the field Incident Command Post and the Corporate Emergency Response Centre.

Extended Emergencies

In an extended emergency, company responders will develop an Incident Action Plan utilizing forms found within ERP, which may include:

- ICS Form 201 – Incident Briefing
- ICS Form 202 – Incident Objectives
- Form A1 – Initial Emergency Report
- Form A4 – Incident Action Plan (IAP) Checklist

Emergency Response, Continuity and Recovery

In the event of an emergency, each business unit shall determine the level of emergency as per established protocols and respond according to their respective emergency response plans. Response includes the mobilization and ongoing management of resources, people, equipment and assets to manage the effects of an incident; functions inclusive of the Incident Command System (ICS), the company's primary response platform.

Each business unit shall establish, implement and maintain procedures for communicating information related to emergency management, including:

- Communication of plans and procedures to employees, operating partners, contractors, the supply chain, regulators and local communities; and
- Emergency and crisis communications to stakeholders, including emergency responders, regulators, the media, family members and the public.

Emergency Management Monitoring, Assessment and Continuous Improvement

Lessons learned and knowledge generated from monitoring results should be used to develop "improved practices", which are then shared widely. After emergencies or disasters occur, a systematic approach is used to learn lessons from the experience, increase effectiveness and improve emergency management practices and processes.

Manual Updating Procedures and Schedule

The company's Corporate and Site-Specific ERPs are to be updated annually and submitted to the CER on or before April 1st of each year, or when significant changes (either operational or identified from exercises/incidents and resulting debriefs) occur or are identified. If an update occurs outside of the January 1st to April 1st period, a letter must be submitted to the CER indicating that there have been no changes to operations since the ERP was last submitted. ERP updates are performed by a third-party company (H2Safety), whose expertise in the field provides company personnel with the education, training, and resources to excel in Emergency Response. Approvals for ERP updates will be carried out by the company's Emergency Management Coordinator.

Debriefing

Internal Debriefing

The Incident Commander, in consultation with the Lead Agency and/or other regulatory body, will order "Return to Normal" status.

- All response team members and on-site personnel, including contract personnel and emergency services, will be notified.
- All previous contacts including public, workers, landowners, government and industrial operators must also be notified of the end of the emergency.
- Ensure a media statement is prepared and delivered by Senior Management.
- Debriefing meeting(s) with company personnel (including insurance, legal, and human resources as appropriate) must be conducted.
- Debriefing meeting(s) to review effectiveness of the Emergency Response Plan must be conducted. Feedback and comments as a result of the debrief must be incorporated into the ERP revision and procedures. This feedback should be submitted to the ERP provider.
- Debriefing meeting(s) with residents, landowners, Lead Agency and other government agencies and all other impacted parties may be conducted.
- Document all "Return to Normal" activities.
- Complete response debriefing for all response teams. Submit, in writing, response findings and recommendations to the Incident Commander when applicable, which will be submitted to the overall report writer.

Public Debriefing

When the public has been impacted, company operations should provide the public information as soon after the emergency as possible, to answer any questions or concerns. This should be done by a senior company representative, a trained Media Advisor, or by the Incident Commander.

After an emergency, a number of additional items should be considered:

- Debriefings, as mentioned above.
- Crisis management for company personnel and for other members of the public that may have been significantly affected by the emergency.
- If the emergency is of a level where it has impacted the public, an information center may be established within the community where the emergency occurred to answer any questions posed by the public.
- Establish a means of compensating citizens who may have had out-of-pocket expenses (such as meals and lodging costs) as a result of the emergency.
- Through the media, provide details of the investigation into the incident that are pertinent to the public, as it becomes available.

Health and Safety Plan

The company's extensive Health and Safety program is to be implemented at all times during and after an incident. Training is provided to all company employees and contractors; all information and documentation can be found in the Health and Safety Manual.

Site Specific Control Points and Response

In the event of an incident (reported from an external source and/or confirmed by a drop in pressure), an operator would be sent out to visually confirm the need to shut down operations. Operators have the ability to manually trip the ESDs at the risers on the CER line. The operator would then immediately contact his/her supervisor and the TSB, and then work with internal support and outside agencies to determine a plan of action for resolving the source of the release.

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WHITECAP RESOURCES
1-250-787-3700 / 1-866-590-5289

24 HOUR EMERGENCY NUMBER **(BC) 1-250-787-3700**
(AB) 1-866-590-5289

Primary Incident Command Post (ICP)
Boundary Lake Field Office   250-781-3315
Box 60, 1200 - 248th Road   Ext: 291
Goodlow, BC V0C 1S0   Fax: 250-781-3344

Corporate Emergency Operations Centre (CEOC)
Whitecap Resources Head Office   Bus: 403-266-0767
3800, 525 - 8th Avenue SW   Fax: 403-266-6975
Calgary, AB T2P 1G1

Alternate CEOC
H2Safety Services Office   Toll Free: 888-216-2332
210, 7260 - 12 Street SE   Fax: 403-313-9180
Calgary, AB T2H 2S5

KEY RESPONSE PERSONNEL

BOUNDARY LAKE CER PIPELNE FIELD

Area Superintendent

Lead Operator

Field HSE Advisor

CALGARY OFFICE

Operations Engineer

VP Production

VP Operations

VP Production & Operations

VP HSE

Refer to the "Response Teams Phone List", behind the Section 1.0: Initial Response blue tab for additional contact information.

OPERATIONS SUMMARY

Whitecap Resources is the owner and operator of two CER pipelines within their Boundary Lake field located within Peace River Regional District (BC) and Clear Hills County (AB) northeast of Fort St. John, BC and northwest of Grande Prairie, AB.

Two pipelines, under CER jurisdiction, cross the British Columbia / Alberta border. There is one 10" oil well effluent pipeline that transports product from 03-23-84-13 W6M (AB) to the oil treating facility for processing and an 8" fresh water pipeline that transports injection water back to 03-23-84-14 W6M, where it is distributed throughout the field for voidage replacement.

EPZ & Hazard Information
The maximum expected H2S concentration for the CER pipeline is 0.10%, with a maximum EPZ of 10 m.

On-Site Storage
There is no on-site storage gathered for this field.

Closest Urban Centre
The city of Fort St. John is located approximately 35 km southwest of the EPZ and has a population of +/- 20,155.

Hydrology
Boundary Creek, Boundary Lake, and various unnamed creeks & waterbodies. Refer to the map for more information.

Highways
Highway 64 (Cecil Lake Road). Refer to the map for more information.

Site Access
Refer to the following pages for access maps and directions. Various locations are gated and locked - Operators have a the key to access. Poor (muddy) driving conditions can occur with rain/snow.

SAFETY EQUIPMENT

Operator / Truck Safety Equipment
Each operator carries the following equipment in their vehicles: ERP truck book, 20 lb fire extinguisher, hand held radio and gas detector, first aid kit, 4-head monitor and cell phone. 6 SCBAs are positioned at satellites throughout the field.

Notification
Operators attend to the facility, wells and gathering system 7 days a week. Facilities are equipped with alarms that result in operators being notified on a 24/7 basis and result in on-call operators responding to the field or site. All automated compressor sites have automatic flare igniters and LEL and gas detection.

Communications
The primary method of communication is by cellular phone. There is limited cell reception in the south end of the field. Two-way radios are also utilized daily.

Roadblock Kits / Ignition Kits*
The are three roadblock kits and two flare guns located at the Boundary Lake Field Office. An additional roadblock kit is kept in the Rig Shack. Roadblock kits contain the following: stop signs, orange safety vest, flashlight(s), red caution tape, three pop up pylons, and a flashing beacon. Ignition equipment and trained personnel can be provided by Ignition Service companies. See Support Services for more information.

*** If any of the above mentioned safety equipment is insufficient, Whitecap Resources personnel will contact a local safety company who will be asked to provide additional equipment.*

AREA USERS / TRANSIENTS
Note: All numbers, unless otherwise indicated, are 24 hours.

SURFACE DEVELOPMENTS

As the EPZs do not impact any surface developments, no information has been gathered. In the event of an incident, assign rovers to patrol the area.

GOVERNMENT AGENCIES
Note: All numbers, unless otherwise indicated, are 24 hours.

For incidents involving the CER regulated pipeline, call the CER 24 hour number

Federal Agencies

SUPPORT SERVICES
Note: All numbers, unless otherwise indicated, are 24 hours.

Mobile Air Monitoring*
Davis Safety - Grande Prairie, AB   780-441-8045
Firemaster Oilfield Services - Grande Prairie, AB   877-342-3473
Trojan Safety Services - Grande Prairie, AB   877-785-9558
Safety Boss - Fort St. John, BC   800-882-4967
HSE Integrated - Red Deer, AB   888-346-8260

Oilfield Fire Fighting / Safety Contractors*
Firemaster Oilfield Services - Grande Prairie, AB   877-342-3473
HSE Integrated - Grande Prairie, AB   888-346-8260
Trojan Safety Services - Grande Prairie, AB   877-785-9558
Safety Boss - Fort St. John, BC   800-882-4967

Well Control Specialists*
Firemaster Oilfield Services - Grande Prairie, AB   877-342-3473
Safety Boss - Fort St. John, BC   800-882-4967
Capstone Blowout Recovery - Airdrie, AB   866-347-3911

Ignition Services*
Firemaster Oilfield Services - Grande Prairie, AB   877-342-3473
HSE Integrated - Grande Prairie, AB   888-346-8260
Safety Boss - Fort St. John, BC   800-882-4967
Due to response time, dispatch support services at a Level 1 Emergency. Response times vary (1.5 - 15 hours), depending on the location where support is coming from.

Emergency Response Management
H2Safety Services Inc. - Calgary, AB   403-212-2332
Toll Free: 888-216-2332

Bus Transportation
Northern Express - High Level, AB   780-926-0808
Reilly Transfer - Grande Prairie, AB   877-539-1312
BC Bus North - Fort St. John, BC   Admin: 844-564-7494

Helicopter Companies (Day Flying Only)
Bailey Helicopters - Fort St. John, BC   250-785-2518
Canadian Helicopters Ltd. - Fort. St. John, BC (no loud hailers) 250-787-0431
Yellowhead Helicopters - Fort St. John, BC   250-785-2331

Spill Response
SWAT Consulting - Grande Prairie, AB   866-610-7928
Clean Harbors Energy & Industrial Services - Fort St. John, BC 800-645-8265
Highmark Environmental - Fort St. John, BC   250-261-6994

Spill Equipment
Western Canadian Spill Services (WCSS) - **COOP 8 & 9*** 866-541-8888
See WCSS's website (http://www.wcss.ab.ca) for more information, equipment details, locations, and directions.

Reception Centres
Clearview Elementary School   Admin: 250-781-3333
13786 - 223rd Road, Goodlow, BC

Evangelical Church of Goodlow
13906 - 211th Road, Goodlow, BC

Lakeview Inn & Suites   250-787-0779
10103 - 98th Avenue, Fort St. John, BC

EMERGENCY SERVICES
Note: All numbers, unless otherwise indicated, are 24 hours.

Ambulance / RCMP   **911**
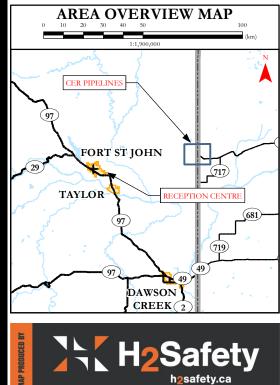Air Ambulance (STARS)   888-888-4567

Fire Departments   **911**
The Boundary Lake field does NOT have fire coverage from a local fire department in BC. All fires must be handled by Whitecap, mutual aid partners, or contract oilfield fire fighting services. Local fire departments in BC will only respond to motor vehicle accidents and medical emergencies outside of their fire protection area unless specifically dispatched by EMBC or the Local Authority.
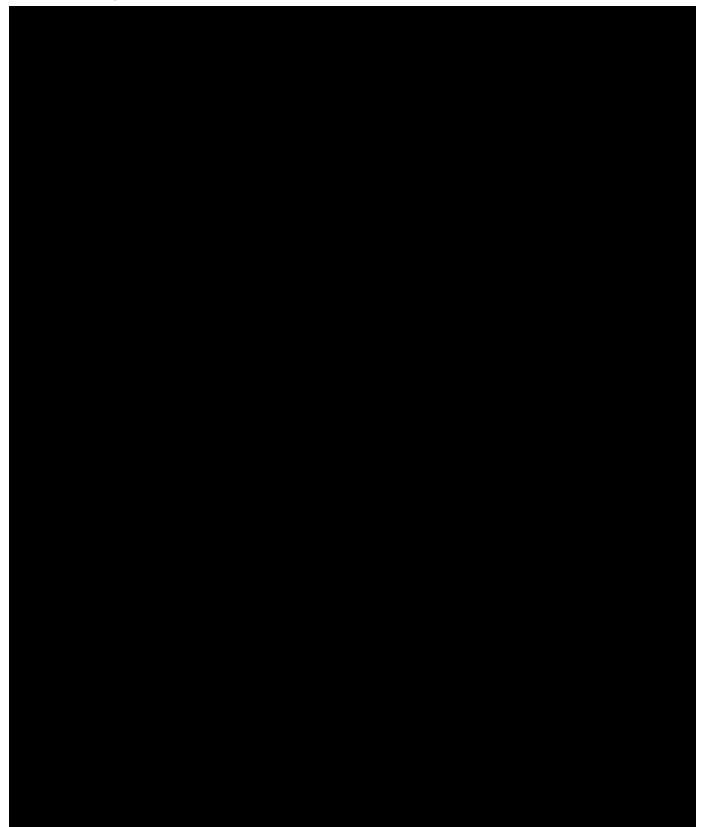
Hospitals
Fort St. John Hospital & Peace Villa, BC   250-262-5200
Grande Prairie Regional Hospital, AB   780-538-6146

Alberta Poison and Drug Information Service   800-332-1414

BC Drug and Poison Information Centre   604-682-5050

ATCO Electric   800-668-2248

BC Hydro   800-224-9376

Fortis BC Electric   866-436-7847

Fortis BC Gas   800-663-9911

Alberta One-Call   800-242-3447
www.albertaonecall.com

BC One-Call   800-474-6886
www.bconecall.ca

WHITECAP RESOURCES INC

CER PIPELINES

NAB/NEBC ERP

WHITECAP RESOURCES INC

0   0.5   1   2   (km)

Legend

Symbol	Description	Symbol	Description
	Third Party Well		Occupied
	Suspended Gas Well		Business
	Oil Well		Occupied Facility
	Suspended Oil Well		Abandoned
	Injection Well		Communication Tower
	Service Well		Locked Gate
	Suspended Well		Staging Area
	Well Location		River Flow Direction
	Third Party Facility		Hydrology
	Facility		Waterbody
	Gas Plant		Urban Area
	Water Pipeline		Grazing Lease
	Oil Pipeline		AER/OGC
	Other Roads		Health Authority
	Main Hwy		Local Authority
	Divided Hwy		RCMP
	Railway		Trapper Boundary
			EPZ
			Egress EPZ

AREA OVERVIEW MAP

0   10   20   30   40   50   100   (km)

1:1,900,000

CER PIPELINES

97

FORT ST JOHN

717

29

RECEPTION CENTRE

TAYLOR

97

681

719

97   49   49

DAWSON CREEK   2

Boundary Lake BC Unit 1 Site Access from Fort St. John

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Boundary Lake BC Unit 1 Site Access from Grande Prairie
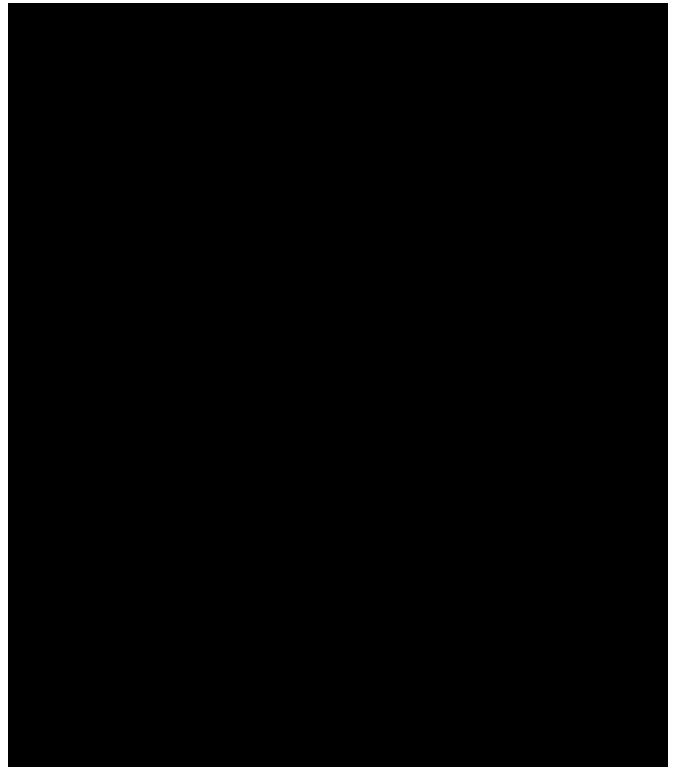
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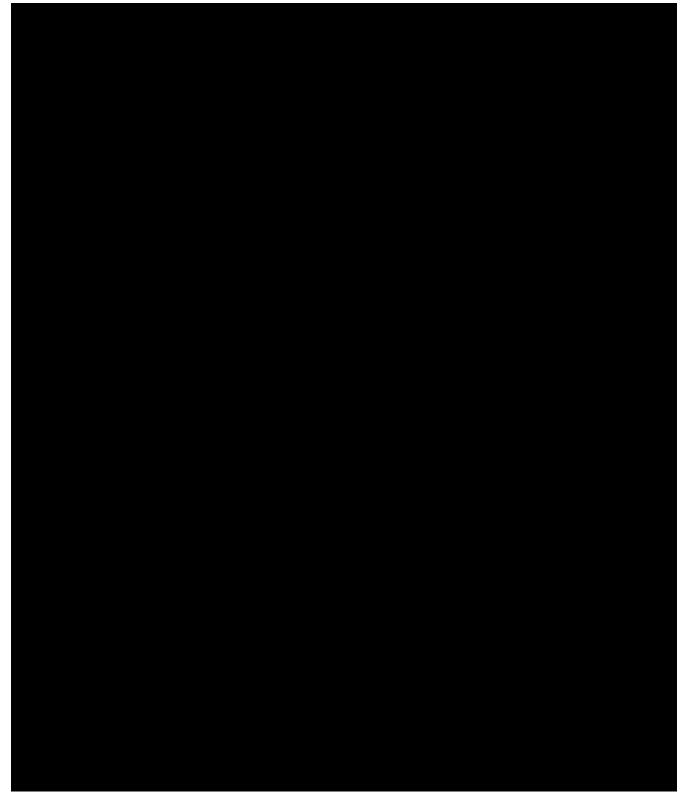
Boundary Lake Alberta Site Access from Grande Prairie

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Boundary Lake - CER Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	END VALVE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	EXPECTED PRESSURE (kPa)	LICENSED H2S (%)	EXPECTED H2S (%)	GAS FLOW RATE (1000m3/d)	LIQUID FLOW RATE (m3/d)	GLR	TEMP (°C)	Z	DIR 56 RELEASE VOLUME (m3)	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS
										WHITECAP SOUR OPERATING																			

LEGEND

Water Cross: CC=Creek Crossing   LC=Lake Crossing   OC=Overhead Crossing   RC=River Crossing   XA=Other Crossing

Facility: B=Battery   BE=Blind End   CP=Chemical Plant   CS=Compressor Station   GP=Gas Plant   GS=Gas Gathering System   IP=Injection Plant   LH=Line Heater   MS=Meter Station
PL=Pipeline   PS=Pump Station   S=Satellite   WE=Well   LR=Loading Rack

Valve: CV=Check Valve   ESD=Emergency Shutdown Valve

Substance: CO=Crude Oil   FG=Fuel Gas   FW=Fresh Water   HV=High Vapour Pressure   LV=Low Vapour Pressure   NG=Natural Gas   OE=Oil Effluent   SG=Sour Gas   SW=Salt Water   MP=Multiphase

Status: A=Abandoned   D=Discontinued   N=Not Constructed/Approved   O=Operating   P=To Be Constructed   U=Unknown   Q=Active   C=Cancelled   S=Suspended   R=Removed

Other: EPZ=Emergency Planning Zone   IIZ=Initial Planning Zone   PAZ=Protective Action Zone   Wall=Wall Thickness   OD=Outside Diameter   Z=Compressibility Factor

GLR=Gas-To-Liquid Ratio   TEMP=Temperature

H2Safety

Hazard Assessment

Whitecap British Columbia Field Operations

March 2022

Table of Contents

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1.0 Introduction

The objective of the hazard assessment process is to identify, assess, and quantify the consequential emergency events which may result from Whitecap Resources' specific oil and gas activities. This is achieved by identifying all relevant oil and gas substances currently under process / storage containment within a defined area. From that, the realistic worst-case scenario resulting from an incident which could directly or indirectly impact public safety has been determined.
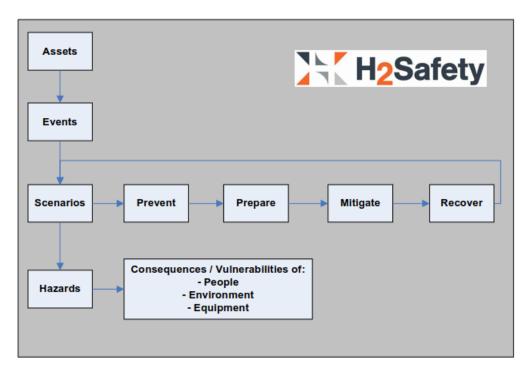
Utilizing best practices in the field of emergency management and with consideration of CSA Z246.2-18 Emergency Preparedness and Response for Petroleum and Natural Gas Industry Systems, this hazard assessment process will permit Whitecap Resources to deliver an effective and timely response protocol for each identified consequential emergency event in order to protect the public, the environment and assets.

This document also intends to meet the following regulations:
- BC Oil & Gas Commission Emergency Management Manual; November 2021; Version 2.3
- National Energy Board Onshore Pipeline Regulations – SOR/99-294
- Canadian Environmental Protection Act, 1999

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2.0 Hazard Risk Vulnerability Assessment (HRVA)

The first step in our hazard assessment is to complete a Hazard Risk Vulnerability Assessment (HRVA) for the area which includes the following steps:

Assets – a complete list of assets in a geographical area.

Events – these are triggers that start an emergency. These can be natural (earthquake, flood) or manmade (human error, equipment failure).

Scenarios – the event then triggers an emergency scenario to occur. We then review these scenarios to look at Prevention, Preparation, Mitigation, and Recovery.

Hazards – the various scenarios then create a hazard that can affect people, the environment, or property.

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2.1 Scenarios

Included below is a list of most probable scenarios that could occur at an oil and gas location. This would include wellsite's, pipelines, pipeline risers, or at a facility. Scenarios are then reviewed from the following perspectives:
- Preventative – steps taken to reduce the occurrence of a scenario happening
- Preparation – ensuring preparedness if a scenario occurs
- Response – steps taken to reduce impacts if a scenario does occur
- Recovery – actions taken after the scenario has been resolved

Emergency Scenario	Preventative Measures	Preparation Measures	Response Actions	Recovery Actions
Fire	- Engineering Controls - Administrative Controls - Training / exercises - Grounding procedures for vessels and trucks	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	- Repair / Replace damaged equipment
Container Rupture	- Engineering Controls - Administrative Controls - Training / exercises - Preventative maintenance procedures - Operator present daily - Pressure Safety Valve (PSV) - PSV serviced regularly - Secondary containment - Berms	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	- Incident investigation - Recover Product - Environmental and/or wildlife cleanup and rehabilitation
Loading / unloading incident	- Engineering Controls - Administrative Controls - Training / exercises - Operator present daily - Secondary containment - Berms - Truck loading / unloading procedures - Positive grounding procedures - Driver competency check	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	- Incident investigation - Environmental and/or wildlife cleanup and rehabilitation
Physical Container Damage	- Engineering Controls - Administrative Controls - Training / exercises - Operator present daily - Restricted areas - Physical barriers - Tank farm design - Signage - Check Valves - Secondary containment	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	- Incident investigation - Recover Product - Repair / Replace equipment

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Emergency Scenario	Preventative Measures	Preparation Measures	Response Actions	Recovery Actions
Container Degradation	- Engineering Controls - Administrative Controls - Training / exercises - Operator present daily - External inspections - Vessel coating - Asset integrity program	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	- Incident investigation - Recover Product - Repair / Replace equipment
Environmental Impacts (freezing, excess heat, etc)	- Engineering Controls - Administrative Controls - Training / exercises - Preventative maintenance procedures - Operator present daily - Pressure Safety Valve (PSV) - PSV serviced regularly - Secondary containment - Berms	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	- Incident investigation - Recover Product - Environmental and/or wildlife cleanup and rehabilitation
Pipe System Failure	- Engineering Controls - Administrative Controls - Training / exercises - Preventative maintenance procedures - Operator present daily - Equipment and lines clearly identified - Check Valves - Manual Block Valves - Automatic or remote Emergency Shutdown Valve (ESD) - Asset Integrity program - Technical Safety BC compliance	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	- Incident investigation - Recover Product - Environmental and/or wildlife cleanup and rehabilitation

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2.2 Hazards

Based on typical oil and gas products and the scenarios above, we can typically classify hazards into the following categories:
- Physical Hazard: Flammable, Combustible, or Oxidizing Substances
- Physical Hazard: Potential for Pool Fires
- Human Health Hazard: Inhalation Toxicity
- Human Health Hazard: Carcinogenicity
- Human and Environmental Health Hazard: Corrosive Substances
- Environmental Health Hazard: Persistent, Bioaccumulative, or Aquatically Toxic

These hazards have the potential to result in the following consequences:

Impacted	Potential Consequences
Company Employees	- Fatality - Permanent Disability - Lost time Injury - Illness - Medical Aid - Low to no potential consequences
Other Workers in the Area	- Fatality - Permanent Disability - Lost time Injury - Illness - Medical Aid - Low to no potential consequences - Evacuation / restricted access / road closures
General Public	- Fatality - Permanent Disability - Lost time Injury - Illness - Medical Aid - Low to no potential consequences - Evacuation / restricted access / road closures
Environment	- Release into atmosphere / plume - Release of flammable gas / liquid - Release of corrosive liquid - Liquid spill on land and negative impacts to plant life - Liquid spill into water body and negative impacts to water and plant life - Negative impacts to wildlife (illness, injury, disability, or fatality)
Equipment	- Equipment failure / damage - Complete loss of equipment - Lost revenues

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3.0 Hazard Planning Zones

The purpose of the Hazard Assessment is to determine zones for emergency planning purposes. Hence, actual response zones may be smaller or larger than the planning zones based on real world air monitoring, terrain impacts, weather, etc.

The Hazard Assessment considers hazards from primary sources only. Cascading events (one BLEVE event leading to another) and chemical reactions are not considered in the Hazard Planning Zone (HPZ) calculations.

To quantify the hazards described above, we must determine how an HPZ is defined. This is typically done by determining what endpoint is used in the modeling. Modeling endpoints are often based on a Level of Concern (LOC) which is a threshold that relates a modeling endpoint to a human health effect.

Hazard	Endpoint	Units	Health Effects
Thermal Radiation	5.00	kW / m^2	2nd degree burns within 60 seconds
Overpressure	3.50	Psi	Serious injury likely
Toxic Effects	Dependent on substance released		

- Thermal radiation – high temperatures associated with the burning of gas can cause significant burns or even death to individuals that are too close to the heat source.
- Overpressure – is the pressure above atmospheric pressure that is caused by the shock wave created from an explosion. Overpressure can result in structural damage leading to public harm or directly by damaging hollow organ systems such as auditory, respiratory, and gastrointestinal systems.
- Toxic Effects – Various substances will have different effects

Thermal Radiation and Overpressure LOC's are from ALOHA; which is an air hazard modeling program developed jointly by NOAA and the Environmental Protection Agency (EPA). Toxic Effect HPZ's are determined utilizing numerous methods and LOC's depending on the substance, but are generally completed using one of the following:
- BC Oil & Gas Commission Emergency Management Manual; November 2021; Version 2.3
- Alberta Energy Regulator (AER) ERCBH2S Dispersion Model
- Transport Canada 2016 Emergency Response Guidebook
- ALOHA Dispersion Model

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3.1 Deactivated Pipelines

In accordance with the BCOGC Oil and Gas Activities act – Pipeline Regulation, all pipelines being re-licensed to Deactivated status must be deactivated in accordance with CSA Z662. CSA Z662 states under section *10.15.1.1 Deactivation of piping*:
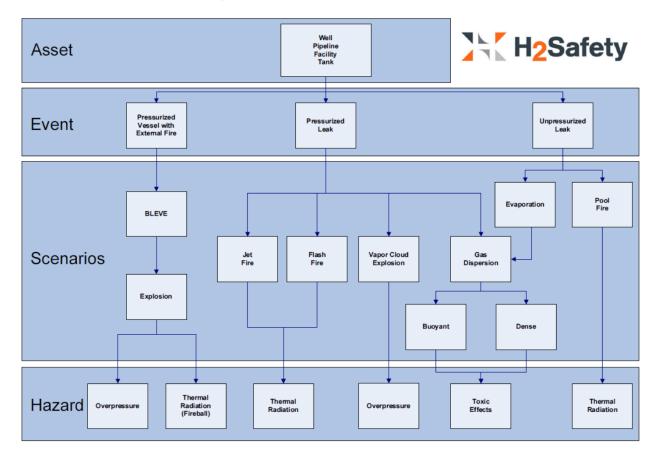Operating companies deactivating piping shall
   a) Isolate the piping, using blind flanges, weld caps, or blanking plates suitable for the pressure from which the deactivated piping is being isolated;
   b) Where required, provide a pressure-relief system; and
   c) Fill the piping with a suitable medium, having regard for the intended duration of the deactivation, the effects of the medium on the integrity of the piping, and the potential consequences of a leak.

As a corrosion inhibitor may be utilized in deactivated pipelines, a hazard planning zone (HPZ) of 10 meters has been assigned to all deactivated pipelines to represent the pipeline right-of-way.

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4.0 Methodology

Included below is the methodology used to determine HPZ's.

5.0 Asset Tables

For asset tables, refer to the back of the applicable supplement area (white tabs). Each set of asset tables will include their associated Hazard Planning Zones (HPZ's).

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6.0 Health Effects

Included below is a list of most probable health effects that could occur at an oil and gas location.

Hazardous Product	General Description	Health Effects
Natural Gas	- Extremely flammable. - Will be easily ignited by heat, sparks or flames. - Will form explosive mixtures with air. - Vapours from liquefied gas are initially heavier than air and spread along ground.	Hydrogen sulphide gas and hydrocarbon vapours may: - Cause irritation of eyes, nose and throat, dizziness and drowsiness. - At higher concentrations, sever irrigation of eyes, nose, throat and lungs may occur. - Unconsciousness and respiratory failure may happen without warning. Death may result if not promptly revived. - Contact with skin may cause irritation and possibly dermatitis. Hydrocarbons are absorbed through intact skin. - Contact of liquid with eyes may cause sever irritation.
Carbon Dioxide	- Vapours from liquefied gas are initially heavier than air and spread along ground.	- Vapours may cause dizziness or asphyxiation without warning. - Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
Hydrogen Sulphide	- Flammable - explosive when mixed with air – forms SO_2 when combusted - Rotten egg smell at low concentrations – inhibits olfactory senses at high concentrations. - Heavier than air; will tend to disperse slower in sheltered or low lying areas. - Extremely toxic.	- Initial odour of H_2S detected at about 0.1 ppm. Gas/vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness. - H_2S may cause a loss of sense of smell at 100 ppm. At higher concentrations, severe irritation of eyes, nose, throat and lungs, dizziness. Headache, nausea, unconsciousness and respiratory failure may occur. Death may result if not revived promptly. - Contact with skin may cause irritation and possibly dermatitis. Absorbed through intact skin. - Contact of liquid with eyes may cause severe irritation and possible damage.

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Hazardous Product	General Description	Health Effects
Oil or Condensate	- Colourless/straw coloured liquid, hydrocarbon and rotten eggs odour. - Material will ignite at normal temperatures.	- Gas/vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness. - H_2S may cause a loss of sense of smell at 100 ppm. At higher concentrations, severe irritation of eyes, nose, throat and lungs, dizziness. Headache, nausea, unconsciousness and respiratory failure may occur. Death may result if not revived promptly. - Contact with skin may cause irritation and possibly dermatitis. Absorbed through intact skin. - Contact of liquid with eyes may cause severe irritation and possible damage.
Nitrogen	- Containers may explode when heated. Ruptured cylinders may rocket.	- Vapours may cause dizziness or asphyxiation without warning. - Vapours from liquefied gas are initially heavier than air and spread along ground.
Compressed Air	- High pressure air	- Possible burns, abrasions and skin irritation.
Steam	- High pressure, high temperature air/water	- Possible burns and skin irritation.
Emissions	- Carbon monoxide	- Very toxic. - Can harm the blood (decreased ability to carry oxygen). Symptoms may include headache, nausea, dizziness, drowsiness and confusion - May cause permanent damage to organs including the brain and heart. - Symptoms of mild frostbite include numbness, prickling and itching. - Symptoms of more severe frostbite include a burning sensation and stiffness. The skin may become waxy white or yellow. Blistering, tissue death and infection may develop in severe cases.
	- Sulphur Dioxide	- Very toxic if inhaled. - Causes severe skin burns and eye damage - Corrosive to the respiratory tract.

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Hazardous Product	General Description	Health Effects
Produced Water	- Clear to dirty grey liquid. - Flammable liquid and vapour.	- Can be fatal if inhaled. - Causes serious eye irritation. - May cause skin irritation. - May cause gastrointestinal irritation.
Diesel	- Bright, oily liquid; clear to yellow in colour with mild petroleum-like odour. - Flammable liquid and vapour.	- May be fatal if swallowed and enters airways. - Causes skin irritation. - Harmful if inhaled. - May cause damage to organs through prolonged or repeated exposure.
Gasoline	- Clear to slightly yellow or green liquid with Gasoline odour. - Extremely flammable liquid and vapour.	- May be fatal if swallowed and enters airways. - Causes skin irritation. - May cause drowsiness or dizziness. - May cause cancer. - May cause damage to organs through prolonged or repeated exposure.
Lube Oil	- Yellow liquid with petroleum oil like odour.	- May cause skin and eye irritation. - Repeated or long term exposure may cause dizziness or drowsiness.
Propane	- Colourless, liquefied gas. - Extremely flammable and may explode when heated. - Will be easily ignited by heat, sparks or flames. - Will form explosive mixtures with air. - Vapours from liquefied gas are initially heavier than air and spread along ground.	- May displace oxygen and cause rapid suffocation. - May cause respiratory irritation. - Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. - May cause eye and skin irritation.
Corrosion Inhibitor	- Black liquid. - Highly flammable liquid and vapour.	- Harmful if swallowed or in contact with skin. - Causes skin irritation. - Causes serious eye damage. - Toxic if inhaled. - May cause drowsiness or dizziness. - May cause kidney damage through prolonged or repeated exposure.

Hazardous Product	General Description	Health Effects
Scale Inhibitor	- Colourless liquid. - Flammable liquid and vapour.	- Harmful if swallowed. - May cause damage to eyes. - May cause damage to kidneys through prolonged or repeated exposure.
Paraffin Inhibitor	- Clear liquid. - Hydrocarbon-like odour. - Flammable liquid and vapour.	- Harmful in contact with skin and can cause skin irritation. - Causes serious eye irritation. - May cause respiratory irritation. - May cause drowsiness or dizziness. - May cause cancer or genetic defects. - May cause damage to nervous system through prolonged or repeated exposure. - May be fatal if swallowed and enters airways.
Biocide	- Colourless liquid. - Pungent odour. - Flammable liquid and vapour.	- Causes serious eye damage. - Causes severe skin burns. - May cause allergic skin reaction. - Harmful if swallowed. - Causes digestive tract burns. - May cause allergic respiratory tract irritation. - Toxic if inhaled.
Demulsifier / Emulsion Breaker	- Clear amber liquid. - Highly flammable liquid and vapour. - Hydrocarbon-like odour.	- Harmful if swallowed. - May be fatal if swallowed and enters airways. - Causes skin irritation. - Causes serious eye irritation. - May cause respiratory irritation. - May cause drowsiness or dizziness. - May cause genetic defects.
Ethylene Glycol	- Clear, colourless, viscous liquid.	- May cause eye irritation. - May be harmful if inhaled. Causes respiratory tract irritation. - May be harmful if absorbed through skin. Causes skin irritation. - May be harmful if swallowed.

Hazardous Product	General Description	Health Effects
Natural Gas Liquids (NGL)	- Colourless, liquefied gas. - Extremely flammable and may explode when heated. - Will be easily ignited by heat, sparks or flames. - Will form explosive mixtures with air. - Vapours from liquefied gas are initially heavier than air and spread along ground.	- May displace oxygen and cause rapid suffocation. - May cause respiratory irritation. - Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. - May cause eye and skin irritation.
Liquefied Petroleum Gas (LPG)	- Colourless, liquefied gas. - Extremely flammable and may explode when heated. - Will be easily ignited by heat, sparks or flames. - Will form explosive mixtures with air. - Vapours from liquefied gas are initially heavier than air and spread along ground.	- May displace oxygen and cause rapid suffocation. - May cause respiratory irritation. - Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. - May cause eye and skin irritation.
Methanol	- Clear, colourless liquid. - Alcohol-like odour. - Highly flammable in liquid and vapour.	- Toxic if swallowed. - Toxic in contact with skin. - Toxic if inhaled. - Causes damage to organs.
Jet Fuel (Jet B or Avgas)	- Clear to straw-coloured liquid. - Highly flammable liquid and vapour. - Gasoline-like odour.	- May be fatal if swallowed and enters airways. - Causes skin irritation. - May cause drowsiness or dizziness. - May cause cancer. - May cause damage to organs through prolonged or repeated exposure.
Amine (MEA)	- Clear, colourless liquid. - Amine-like odour. - Combustible at high temperatures.	- Harmful if swallowed, in contact with skin or inhaled. - Causes severe skin burns and eye damage. - May cause respiratory irritation. - May cause damage to organs through prolonged or repeated exposure if swallowed.

Hazardous Product	General Description	Health Effects
H2S Scavenger	- Clear liquid. - Soluble in Water.	- Irritating to eyes and skin. - Irritating to respiratory system. May cause severe irritation burns. - May cause allergic skin reaction. - May be harmful if swallowed.
Other	- At facilities, well-sites, risers, etc., other hazardous materials are likely to be present. Refer to SDS sheets and Transportation Canada Emergency Guidebook for a description and health effects of unlisted hazardous products.	

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